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ABSTRACT

This is the third publication in the European Training Foundation's (ETF's) series of manuals designed to support development of vocational education and training (VET) standards. This volume looks at ways in which VET standards are linked to labor market demands and how relevant VET standards are to the needs of employment in a market economy. Part I, The Impact of Labor Market Information on VET Standards, is based on a report of ETF's Advisory Forum. The report asks "What are the needs of the economy now and in the future?"; tracks changes in important economic indicators; gives examples of Western and New Independent States' experience; and gives examples of how vocational training systems have responded to meet challenges of new economic demands. An example of a flexible VET standard designed to meet changing labor market needs is annexed. Part II, Identifying Labor Market Requirements, is an output of an ETF project to identify and develop methodologies for occupational standards in Estonia, Latvia, Lithuania, Poland, and Slovenia. It spells out the purpose of collecting and analyzing economic and labor market data so education and training policies and program remain relevant to the needs of the labor market and the wider economy; identifies needs and benefits of labor market analysis; and discusses specific research methods. Case studies of labor market analyses in Estonia, Lithuania, and Slovenia are annexed. (YLB)

Qualifications and training methods

MANUAL

Development of vocational education and training standards – the impact of labour market information

Volume 3



European Training Foundation

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Qualifications and
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**Development of vocational education and
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market information**

Volume 3



European Training Foundation

A great deal of additional information on the European Union is available on the Internet. It can be accessed through the Europa server (<http://europa.eu.int>).

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Foreword

This is the third publication in the European Training Foundation's series of manuals designed to support the development of vocational education and training standards. The previous volumes¹ have concentrated on the structure, format and content of vocational education and training standards and presented examples of best practice in EU member states and partner countries. In this volume, Volume 3, we look at ways in which vocational education and training standards are linked to labour market demands. The theme of this volume is therefore not the structure of vocational education and training standards per se, but how relevant they are to the needs of employment in a market economy.

This volume is in two parts which present the results of two studies commissioned by the Foundation and which approach this issue from slightly different perspectives.

Part I, 'The impact of labour market information on vocational education and training standards' is based on the report of one of the thematic sub-groups of the Foundation's Advisory Forum². This report sets the scene by asking 'what are the needs of the economy – now and in the future?'. The report tracks changes in important economic indicators, gives examples of Western and New Independent States' experience and finishes with a number of typical examples of how vocational training systems have responded in order to meet the challenges of new economic demands.

The annex to part I gives an example of a 'flexible' vocational education and training standard designed to meet changing labour market needs.

Part II, 'Identifying labour market requirements', is one of the outputs of the project established by the Foundation to identify and develop methodologies for occupational standards in Estonia, Latvia, Lithuania, Poland and Slovenia.

Part II spells out, in more concrete terms, the purpose of collecting and analysing economic and labour market data so that education and training policies and programme remain relevant to the needs of the labour market and the wider economy. As well as identifying the needs and benefits of labour market analysis, specific research methods are also discussed.

Annexes to part II include case studies of labour market analyses in Estonia, Lithuania and Slovenia.

Part I of this volume was prepared by Bob Mansfield of PRIME Research and Development Ltd., UK, who also edited this and the previous volumes in the series.

Part II was prepared by Martin Dodd of FAS International Consulting, a wholly owned subsidiary of FAS, Ireland's training and Employment Authority.

1 European Training Foundation Manual on Development of Standards in Vocational Education and Training (Volume 1), 1999 (ISBN 92-828-4427-7).

European Training Foundation Manual on Development of Standards in Vocational Education and Training (Volume 2), 2000 (ISBN 92-828-4428-5).

2 The Advisory Forum, comprising training experts from EU member states, the partner countries and relevant international organisations, delivers opinions and advice on the Foundation's annual work programme.

Annexes to part II were prepared by Terry Corcoran, FÄS Senior Economist (Estonia), and Candy Murphy, Senior Labour Market Research Specialist, Goodbody Economic Consultants, Ireland (Lithuania and Slovenia) who worked with the European Training Foundation on the above-mentioned project.

PART I

The impact of labour market information on vocational education and training standards

1.1 *Introduction*

Sub-group C of the European Training Foundation's Advisory Forum has been working on the theme of 'Standards in vocational training' since its establishment in 1994. Each year, the sub-group has studied a key topic:

- 1995: Principles and definition of standards
- 1996: Standards development
- 1997: Implementation of standards in vocational training
- 1998: The evaluation of vocational standards
- 1999: Impact of the labour market on vocational standards

The main results of the sub-group reports (1995-98) have been published as 'European Training Foundation Manual on Development of Standards in Vocational Education and Training (Volume 1) and European Training Foundation Manual on Development of Standards in Vocational Education and Training - Specification, Experience, Examples (Volume 2).

The aim of the 1999 sub-group report was to examine:

- How labour market information influences vocational standards;
- How the influence can be measured and evaluated.

Work on the sub-group report started in January 1999. Following a review of relevant literature sources, a questionnaire was developed which identified key issues and concerns drawn from the literature. The questionnaire was sent to a number of Advisory Forum members in February 1999. It solicited both comments and examples of good practice in the partner countries. The sub-group met in plenary and in smaller working groups in mid-1999 to discuss the themes. Comments and contributions were recorded and form the basis of this report.

We would like to take this opportunity to thank all the members of the sub-group for their help and support in the production of this report. Particular thanks are due to Konstantin Petkovski, chairman of the group, who continued to provide support and to Thomas Schröder and Evelyn Viertel of the European Training Foundation who offered helpful comments, suggestions and feedback.

1.2 The role of the vocational education and training system

1.2.1 The rationale for this study

All vocational education and training systems face the challenge of matching the skills, knowledge and attitudes, which are developed in the students of the system, to the needs of employment - the labour market. The challenge in the partner countries is usefully summarised by Andries de Grip, writing in a recent European Training Foundation report³.

In the former centrally planned economies, there was an inherent close link between the systems of production and training. This close link made it possible for information on skill demand and supply to flow between the production system and the vocational education and training system. The abolition of the centrally planned economies has made it necessary to re-establish the links between the vocational training system and the labour market within the framework of a market economy.

In the centrally planned economies, vocational education and training planning was 'mechanical' - a simple calculation. Because production was forecast and controlled, the numbers of people required in sectors and even specific enterprises was easy to predict. As the economies move through the transition phase, partner countries are facing the problems of meeting labour market demands within the logic of a market economy.

In a market economy, the motivation to produce products and services comes from the desire to generate surplus value by producing those goods and services which customers will buy - within an environment where other companies are competing for the same customers. As customer demand fluctuates, influenced by a number of social and economic factors, the demand for the quantity of labour and particular skills and knowledge will also change. The change will have an impact on the economy as a whole and on individual companies. Vocational education and training planning cannot work from a mechanical model in these circumstances - within a marketplace in a state of continuous change. From a simple calculation, planning becomes a complex equation, balancing and taking account of many factors which vary considerably in their predictability.

The experience of western European economies in meeting this challenge has been to improve the clarity and accuracy of the information needed for both parts of this equation. Improvements have been made in the quality of the economic and statistical information which is used to describe and predict the labour market. Improvements have also been made to the ways in which the vocational education and training system describes the learning process and the learning outcomes, so that the skills and knowledge which are developed can be clearly matched to labour market needs. The most important feature of this change has been the development of vocational education and training standards⁴ - specifications of the educational 'inputs' (the curriculum), the learning process and the learning outcomes.

In this study, our focus is on the development of vocational education and training standards and the ways in which this is influenced by labour market information.

3 Labour market forecasts on behalf of the vocational education and training system, Andries de Grip, in *Linking Labour Market Analysis and Vocational Training*, European Training Foundation, Turin, 1998.

4 The development and expression of vocational standards is discussed in Volume 1 of the Foundation's series on the development of standards.

1.2.2 The purpose of the vocational education and training system

The purpose of the vocational education and training system is to develop sufficient people with the right skills to meet labour market demands. A permanent dilemma for vocational education and training planners is that they are planning the development of people for future labour markets, on the basis of information from past labour markets. This can lead to cycles of skills shortages followed by the over supply of skills.

In the past, considerable research effort has been dedicated to improving the methods used to predict changes in the labour market. Much of this research is quantitative - designed to predict the numbers of people required in different occupational categories. This research is important - but it is not the main focus of this report. Rather, this study examines the changing content of occupations which results from rapid changes in the structure of the labour market and how this can be reflected in vocational standards.

The need to understand the changing content of occupations is a prominent theme in the available literature on labour market analysis. The European Training Foundation's report 'Linking Labour Market Analysis and Vocational Training' contains a useful summary of this issue. We quote three extracts below:

"Decision making for vocational training ... needs to be based on sound labour market analysis in order to:

- monitor actual labour market developments;*
- forecast occupations and qualifications to identify future skill and training requirements*
- but ... forecasting can only provide early warning signs ... it does not provide a basis for 'mechanical' planning."*

"The traditional methods, concepts and parameters of labour market analysis are under scrutiny (examination) to see if and how they can capture changes that are actually taking place within the functioning of the labour market - in particular:

- a dynamic analysis of the labour market taking into account not only the actual situation but also processes, tendencies and trends;*
- the increasing importance of qualitative information, taking into account rapid changes in the organisation of the workplace and the impact this may have on the skills required;*
- the profound rethinking of the clustering - e.g. of occupations used for analysing the labour market;*
- the development of information and analytical tools for capturing new occupations and occupations/professions that are strategic for the economy."*

"There is a lack of targeted information for vocational training - such as:

- the demand for different occupations and their changing work content ...;*
- future skills requirements (available information refers to present skill requirements)."*

Because of this reported lack of information on work content and future skill needs, this study concentrates on the 'qualitative' approach in order to provide useful and helpful support to those working in vocational education and training planning in the partner countries.

1.2.3 *Rapid change and economic turbulence*

From the early 1970s, the previous pattern of stable growth in western European economies changed. The economic reasons for this change are too complex for this report to examine in detail, but the results are of considerable importance to the study. The subsequent period of rapid change and economic turbulence placed new demands on all enterprises and has led to profound changes in the content of occupations:

- less low skilled 'manual labour' is needed - more highly skilled labour is required, particularly at technician levels;
- the increase in product and service ranges and the reduction in product lead times means that more multi-skilled workers are needed - workers who are capable of adapting quickly to new skills demands and changing forms of work organisation;
- with the decline in traditional manual skills, more knowledge and conceptual content is needed to manage automated, computer controlled systems;
- industries which continue to rely on semi and unskilled labour are 'exported' to developing, low labour cost economies;
- operatives become directly responsible for quality assurance and improvement and the control of their own work activities;
- as systems become more complex, coordination of work activity is required at every occupational level - which increases the need for effective team working and cooperation.

Each of these changes must be reflected in the standards used to both define occupational requirements (occupational or employment standards) and the standards used to plan vocational training programmes (vocational education and training standards).

1.2.4 *The vocational education and training response*

Whilst these patterns of economic change are well documented, they remain as broad generalisations backed by anecdotal examples. Some of the patterns give clear signals to vocational education and training planners that changes in the standards used to define the curriculum and the learning process are needed urgently, but the signals are not very precise. The requirement for occupational breadth and the need for a range of core, as well as occupationally specific skills, is now well understood and there are many examples of innovative responses in all partner countries. But the question remains, given that such important changes are taking place, what, precisely, needs to be done within the vocational education and training system to meet these important changes and challenges?

These questions will become important for colleagues in the partner countries, just as they are currently an issue within western European economies. As the partner countries work through the difficult transition phase from centrally planned to market economies, inward investment will increase and newly formed, local companies will realise that they will have to compete in international markets. This will mean that the partner country economies will be forced to orient themselves towards international expectations and requirements and will come under the same pressures that affect western European economies.

To help partner countries to manage this process of change we have examined a number of models and approaches which have been used to improve the quality of response in the vocational training system. The study adopts a simple 'stimulus - response - evaluation' model.

In this model, the stimulus consists of changes in the labour market - both actual and anticipated. Because the changes within the labour market are so complex and are determined by so many factors, we have tried to prioritise the types of change which the vocational training system can both recognise and respond to effectively. We phrase this as a question:

- What are the most important changes and trends in the labour market to which the vocational training system can respond?

This helps us to focus on the types of changes that vocational education and training planners need to identify and monitor in order to change the structure and content of vocational education and training standards.

Having identified the 'input', we move on examine the types of response which are possible within the system and give examples from both western European and partner countries. This section is also phrased as a question:

- How can the vocational training system respond most effectively?

Finally we examine the important issue of evaluation. If changes in the economy are identified and the training system is mobilised into a response, how will we know that public and private sector funds have been used effectively? What signals should vocational training practitioners examine in order to evaluate their success? Our final question is:

- How would the response of the vocational education and training system be evaluated?

1.3 *Changes and trends in the labour market*

There are many changes affecting the labour market and the information about those changes comes from a number of sources. In this section we examine both the **sources** of labour market information and the **types of change** which can be identified.

There is never a single source for labour market information; rather, a number of different organisations produce labour market information, usually from a number of different perspectives. The following can be identified:

1.3.1 *The sources of labour market information*

Source	Examples
1. State institutions	<ul style="list-style-type: none"> ■ Responsible ministries ■ Other agencies funded by central or regional government
2. Vocational education and training institutions	<ul style="list-style-type: none"> ■ National vocational education and training research and development centres ■ Associations representing colleges/vocational schools ■ Local colleges/vocational schools ■ Private training providers ■ Organisations involved in curriculum design and assessment ■ National (vocational) standard setting bodies
3. Employers and employer organisations	<ul style="list-style-type: none"> ■ National bodies representing employers ■ Chambers of commerce ■ Large employers (international companies and inward investors may be particularly important)
4. Occupational groups and social partners	<ul style="list-style-type: none"> ■ Trade associations ■ Industry groups/consortia ■ Trade unions and other similar organisations
5. Cooperative bodies	<ul style="list-style-type: none"> ■ Groups representing different, but connected interests - e.g. employers, trade unions, education providers
6. Professional and regulatory bodies	<ul style="list-style-type: none"> ■ Bodies which represent professions and provide education, training and qualifications ■ Bodies which regulate the activities of professions

Members of the Advisory Forum were consulted on whether these sources were available in their countries and were also asked to comment on the quality of the information received. Their responses were as follows⁵:

	B	BG	CZ	D	DK	GR	LV	LT	LU	MK	NL	UK
A1 What are the sources of labour market information?												
(a) State Institutions	3	4	4	4	4	1	1	3	4	3	1	4
(b) Vocational education and training institutions	3	4	4	4	4	2	3	3	1	3	3	3
(c) Employers and employer organisations	3	3	3	3	1	2	4	1	3	3	3	3
(d) Occupational groups	3	3	3	3	1	4	4	1	1	3	2	3
(e) Cooperative bodies	3	3	3	4	1	2	4	3	1	1	1	3
(f) Professional and regulatory bodies	3	1	1	4	1	3	4	3	1	1	1	3
Total number of sources:	6	5	5	6	2	5	5	4	2	4	3	6
Total sources accurate/useful or usually accurate/useful	6	5	5	6	2	2	5	4	2	4	2	6

5 In the response ratings:

- 4 = the information from this source is accurate and useful
- 3 = the information from this source is usually accurate and useful
- 2 = the information from this source is not accurate and not useful
- 1 = we do not get information from this source

What the response clearly shows is that the respondents receive labour market information from many different sources, although in some cases the information is not very useful (indicated by a score of 2). During discussions within the sub-group it was also suggested that different sources are useful for different types of information. Here are some examples.

It is often possible to identify small but significant changes in labour market requirements by monitoring the training activities of employers and local vocational education and training schools/colleges (including private training providers). This is particularly significant if a vocational education and training school/college has a close relationship with local employers so that they are quick to identify employer requirements. The signals can be:

- increased continuing training activities by employers,
- employer requests for training in new skills,
- the development of a short course or module by a vocational education and training school/college

In Hungary, a network of Regional Training Centres has been established with a flexible, modular training system. The Centres work closely with local employers to help identify needs, particularly in the new technologies⁶.

(It is important to note that in periods of rapid change, a local provider may develop a speculative programme which does not actually meet labour market needs. In monitoring the activities of local providers, this must be taken into account. Only those programmes which are developed in close cooperation with local employers are likely to be useful signals of an emerging labour market need.)

National institutions (state, national vocational education and training centres) are more likely to be a source of future labour market requirements in certain areas. For example, new legislation is planned well in advance at the national or regional government level and any changes resulting from legislation can be built into vocational education and training programmes in advance of implementation.

In the UK, new legislation affecting the roles and responsibilities of probation officers and social workers resulted in new vocational standards and qualifications, designed and implemented before the legislation was introduced.

1.3.2 *The nature of change*

The vocational education and training system receives information from the labour market about significant changes, which require a response. These changes can be categorised as changes in:

- technology;
- regulations;
- markets and customer requirements;
- work organisation and organisational culture.

Each of these categories is described in more detail below.

⁶ For further information, see: Labour market needs in adult training programmes in Hungary, Eva Fodor, in *Linking Labour Market Analysis and Vocational Training*, op cit.

1.3.3 Changes in technology

Area of Technology	Commentary
Microprocessor-based technologies, which affect communication, the processing of information and the use of multi-media.	These three areas are converging. The direct impact is on office automation, robotics, logistics, computer-controlled systems and the use of the internet for communications. Development of both hardware (equipment) and software are significant. The rate of innovation and change is extremely rapid.
	There is also an important impact on the ability to deliver vocational education and training programmes much more flexibly, without the need for a fixed teaching location, fixed study times and fixed examinations / assessment.
The bio-technologies, including genetics	In the partner countries the costs of computer systems are likely to slow down this trend, but companies will increasingly find that they need to increase their technological investment to compete both internally and in export markets.
Energy and the environment	This will have an impact on agricultural based industries, food processing and medicine. This is a relatively new growth area and change is likely to be rapid and difficult to predict. The development costs are also very high, so the impact in the partner countries may not emerge for some time.
Materials	New energy sources and technologies for extraction and use will affect basic industries (extraction, processing) and have an impact on repair and maintenance occupations. Due to high capital and development costs and longer development lead times, change is more planned and easier to anticipate.
Chemicals (including pharmaceuticals)	Concern for environmental issues is now widespread and can influence occupational and vocational standards in all sectors and levels. In partner countries there may be particular concerns as 'older' industries are modernised and policies on waste management are reformed.
	New materials, particularly the development of ceramics, will affect all manufacturing operations. Development time is relatively long, so the introduction of new materials can usually be anticipated.
	New chemicals and chemical processes can affect any manufacturing and processing operation and new pharmaceuticals will affect medical practice. Development time is relatively long, so the introduction of new chemical processes can usually be anticipated. Many partner countries have well-developed chemical industries which are subject to fierce international competition, so the impact of change will be very significant.

A significant challenge posed by frequent technological change is that even if it can be embedded in vocational education and training standards, it can be almost impossible for vocational education and training schools/colleges to keep up to date with the equipment and facilities needed to deliver specific programmes in this area. This is the case in the western European economies and is likely to be even more of an issue in the partner countries.

The latest technologies are usually to be found in large and progressive companies (in partner countries, many of these companies may be inward investors), some technological universities and specialised research centres. There is a growing tendency for new technologies and processes to be patented, so it may be very difficult to reproduce processes and methods, even for training purposes, without infringing patent and copyright legislation.

The cost of such technology and the pace of change mean that it will not usually be available to full time vocational students. This may require vocational education and training providers to develop closer partnerships with companies and to examine the underpinning skills and competence which will be needed to exploit new technologies to the full (e.g. number skills, problem solving skills). It may also mean that specific training will increasingly be done within companies, with vocational education and training providers offering support in curriculum design, assessment and evaluation.

New developments in technology are often reported in trade and professional journals and a rapid training response can often be identified by monitoring the activities of significant employers, private training organisations and consultancies which may develop short courses and modules to meet new and emerging needs.

1.3.4 *Changes in regulations (including legal statutes and codes of practice)*

Type of legislation	Commentary
Health and safety	The growing importance of health and safety legislation will affect practice in all industries. Up to date safe working practices need to be incorporated into all vocational education and training standards and curricula, as well as the growing trend for all employees to have responsibilities for risk management and safety monitoring.
Consumer protection	This is another growth area which affects all sales related occupations and well as most manufacturing and service occupations.
Environmental protection	This type of legislation can affect working practices and methods in all sectors.
Finance and auditing	Changes in legislation affecting the provision of financial services may be particularly significant in the partner countries where there may not be an existing regulatory infrastructure, which is often provided by professional bodies in EU member states. The primary impact is on service sectors providing financial advice and services, but this may also affect sales occupations which are involved with associated finance and loan packages. Auditing regulations will affect many business-related occupations, from clerical to managerial, with a significant impact on SMEs ⁷ and manager/owners.
Introduction of ISO and other international standards	As well as affecting working practices, the adoption of international standards for quality assurance processes also increases the need for accurate documentation and the creation and maintenance of recording systems.
Social legislation	The are many types of social legislation to combat social exclusion, anti-discriminatory, minimum wage, youth protection etc. This may require changes in working practices and in learning methods.
vocational education and training legislation	vocational education and training legislation may affect the content of the curriculum (particularly the introduction of core skills ⁸), the methods and processes of learning and assessment systems.

7 'SME' – Small and medium-sized enterprises (the specific definition of the maximum size of a SME varies in different countries).

8 The term 'core skills' is widely used in all states. However, the precise definition of core skills can vary - so the term is potentially confusing. The European Training Foundation's report 'Development of Core Skills Training in the Partner Countries', Simon Shaw, Sub Group D report, 1998, contains a useful summary of the core skills categories used.

As we have noted before, legislation is usually planned in advance and draft legislation is often circulated for consultation to the social partners before it is confirmed and passed by the government. Furthermore, there is usually a 'time lag' between the legislation being passed and implemented. This gives vocational education and training planners and curriculum designers the opportunity to adjust the standards which support the vocational education and training curriculum, and other parts of the system, to meet the new requirements.

In partner countries the introduction of new legislation may develop slowly in certain areas but more rapidly in areas which are seen as a priority for social change and economic development.

Vocational education and training planners need to be aware that changes in legislation may affect the learning culture as well as working practices and knowledge requirements. For example, a change in health and safety legislation requiring employees to participate in risk assessment and safety monitoring may require the development of practical projects and group work to develop observational and reporting skills, as well as formal teaching based on the new law.

1.3.5 Changes in markets and customer requirements

Type of change	Commentary
Internationalisation	<p>As markets and companies become international and inward investment increases, many employees will need to deal with new customers, products and services, broaden networks with colleagues in different countries and develop foreign language skills. Cross-cultural team working may also be required.</p> <p>Another important feature of internationalisation is 'benchmarking' the quality of products and services with international best practice.</p>
More direct customer contact	<p>In almost all organisations there is increasing awareness of the importance of the customer and the need to develop products and services which fulfil customer expectations rather than products and services which have been designed to meet the needs of organisational efficiency.</p> <p>The core skills of communication and group working are extremely important in this area. In fact they are occupational skills rather than core skills.</p> <p>In partner countries the development of tourism requires that employees in this industry recognise and meet the high expectations of tourists.</p>
Direct advice in sales techniques	<p>As products and services become more diverse and complex, people in sales occupations are required to offer advice to customers, often within the constraints of consumer legislation.</p> <p>Professional advisory services are also on the increase (again related to product and service complexity) and advisory services are often regulated, with advisers required to offer advice in the best interests of the client or customer. In partner countries the growth of professional business services like accountancy and financial investment advice will be extremely significant.</p>
Quality standards	<p>Globally, there is a demand for increased quality standards, both in products and services and in manufacturing and business processes. Standards are often benchmarked to international quality standards like the ISO standards and the Business Excellence Model (BEM).</p>

Many of the changes in this area are very well documented, although the trends are very generalised and difficult to quantify. For example, inward investment and international mergers affect all countries, but it is almost impossible to predict how and when this might occur. Sometimes, inward investment is preceded by highly publicised negotiations with national governments but on other occasions, mergers may be agreed in confidence and take place overnight.

This may require the development of a number of core skills, particularly in communication and group working, in advance and in anticipation of these known changes. These requirements must be embedded as rapidly as possible into vocational standards.

Many of the aspects of competence in this area such as customer contact skills, team working, giving advice, may be difficult to develop through traditional vocational education and training programmes based on full time education and training. Simulation of these skills through role playing exercises lacks validity and is no substitute for direct experience and learning within the work environment. Vocational education and training planners may need to set up arrangements with companies to provide relevant work experience, with agreed learning outcomes, on-the-job coaching and assessment facilities to develop these critical skills.

1.3.6 *Changes in work organisation and organisational culture*

Type of change	Commentary
Management models and systems	<p>Prompted by both changes in production and working systems and changes in social expectations, management systems are becoming more 'democratic' and open. This results in a reduction in the number of levels of hierarchy and shifts management responsibility to the 'front line'.</p> <p>These changes are also influenced by the need for greater efficiency and the elimination of wasted resources in order to remain competitive in both national and international markets. In many companies, entire levels of management have been removed.</p> <p>For employees at all levels this means an increased requirement for the skills of time management, work planning and prioritising, quality management, training and coaching of colleagues and both written and verbal communication.</p>
Decline in mass production systems	<p>In western European economies, consumers increasingly expect greater product diversity and wider choice, so many companies are changing from the mass production methods which were originally developed in vehicle manufacture to manufacturing systems which are more appropriate to increased product ranges. Although this trend is most prominent in vehicle manufacture, the influence is spreading to all manufacturing sectors.</p> <p>Production lines are being replaced by 'cellular manufacturing cells' or production teams, with multi-skilled line operators taking group responsibility for work planning and organisation, quality, logistics and self development/training. Work is seen as more 'holistic' than the performance of routine, repetitive tasks and as a result, overall knowledge requirements also increase.</p> <p>Low skilled labour (such as labourers and cleaners) are no longer required and the entire skills profile of such companies is therefore raised.</p>

Type of change	Commentary
	This influence can also be seen in service and administrative sectors where the focus is increasingly placed on the needs of the individual customer or service user. Health specialists work in interdisciplinary teams as do construction specialists, and office workers are increasingly grouped into project based teams.
	These developments may be slower to impact on partner countries, which are still able to offer competitive wage rates, and where many industries are still 'unmodernised' and using more traditional production methods. However, these trends are likely to occur within inward investor companies and the competitive pressure on local companies will increase.
Rate of innovation	The rate of innovation in both the production and service sectors is another feature of the drive for increased competitiveness and customer demand for wider choice. The production cycle decreases so employees need to adapt to new products and process more often and more quickly. Employees need to have a 'portfolio' of skills which can be adapted and changed to meet new requirements and must have 'learning to learn' skills. Employees also need to be willing to accept change and be committed to a process of lifelong learning.
	These changes will have the greatest impact in systems of continuing training. In initial training the basic occupational and core skills (including learning to learn) need to be developed, which are then followed up by short, intensive training interventions as new skill requirements emerge.
Core business philosophy	Many companies are developing a 'core business' philosophy in which activities not related to the core activity are contracted out or bought in as and when required. This can affect functions like production, training, catering, logistics and distribution, maintenance, design - in fact almost any function. This often increases the number of SMEs in the sector, which then provide essential services on a contract basis for larger companies. This development increases the length and complexity of the supply chain and changes many of the traditional supply relationships. Rather than contracting out to SMEs on lowest cost criteria for each order, large companies tend to develop 'strategic partnerships' in which SME suppliers are supported, developed and given supply guarantees. This influence is likely to have an important impact in partner countries where large inward investors stimulate demand for locally-sourced products and services from SMEs.
The quality organisation	Many of the new quality systems such as Total Quality Management (TQM) and 'just in time' systems require cultural and attitudinal changes to work effectively. The development of quality assurance systems is not just a matter of accurate documentation and recording. People must be committed to quality improvement and take personal responsibility for product and service quality. Again, the impact in partner countries may be more long term, but it is important to recognise that as modernised industries become active in international markets, competitive pressures will force the same demands for quality improvement to international standards.
Growth in self-employment	The SME and self-employed sectors are recognised as being an important source for economic growth. These sectors are expanding, particularly in partner countries, and increase the need for business skills as well as occupationally specific skills in many occupations.

It is tempting to suggest that this is the most important area for change because the impact is so profound, not only on the curriculum content of vocational education and training but also on the culture, processes and practice of vocational education and training systems.

To support SMEs and self-employment, new topics, such as business studies, entrepreneurial skills, and a range of core skills, have to be introduced into vocational education and training standards, often in occupations which have little or no tradition of developing and delivering these skills. The introduction of new working methods may require changes in the learning processes in occupations where there are strong traditions of didactic training and where existing instructors and teachers may have very little direct experience of, for example, production teams.

Management training needs to change from traditional 'direct and control' assumptions about management hierarchies to a more enabling and facilitative style. Traditional approaches to management training in western Europe are also challenged by the increasing numbers of women in higher positions. Some research suggests that the aggressive 'male' approach to management is incompatible with modern company structures and that women adapt more easily to the need to manage with an empowering and facilitative style. Developers of management training in partner countries need to monitor these changes as industries are modernised and cultural norms change with increased democratisation.

The comments made in the previous section; that vocational education and training planners may need to set up arrangements with companies to provide relevant work experience, with agreed learning outcomes and standards, on the job coaching and assessment facilities, also apply to this area.

The rapidity of change and innovation places great emphasis on the core skill of 'learning to learn'. Initial training is usually arranged around broad occupational 'families' to encourage the development of a broad base of occupational and core skills which can be quickly adapted to changing circumstances.

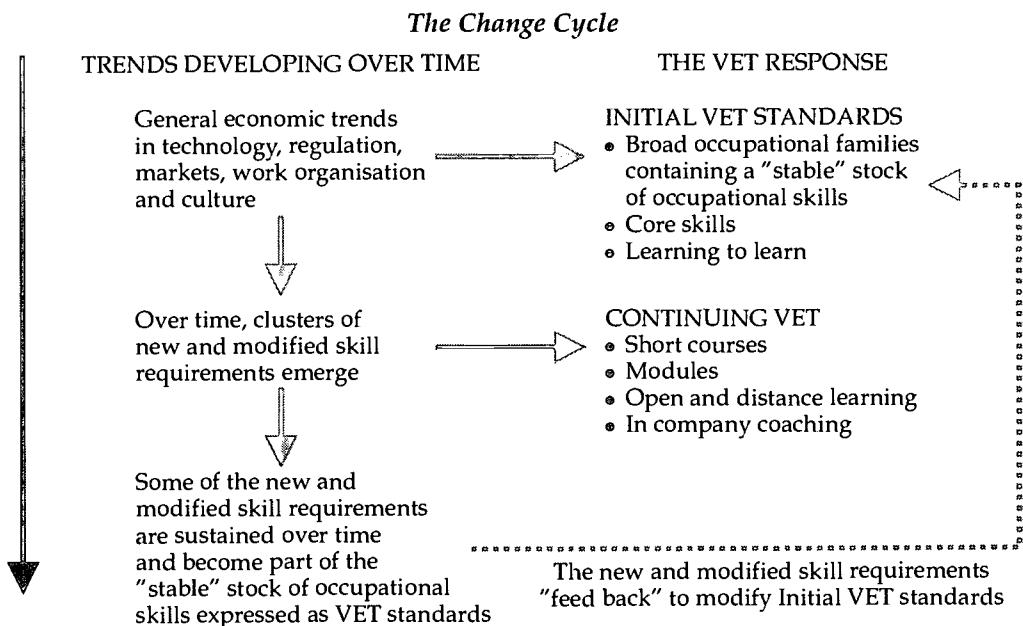
1.3.7 *The change cycle*

There are a number of clear trends in the economy which require a response from the vocational education and training system. This section has expanded on the known trends and given some examples of the type of important change which vocational education and training planners need to monitor continuously using the various sources of labour market and economic information described at the beginning of the section. Of particular importance is the close involvement of the social partners in tracking on-going shifts and in developing effective responses to the changing content of occupations.

Nevertheless, these trends are not usually sufficiently detailed or specific enough to identify the precise occupational or technical skills which may be needed in the future. Furthermore, the time lag involved in developing vocational education and training curricula and standards can mean that 'new' skills may already be out of date by the time an 'updated' standard is introduced.

A realistic response to these general trends is to prepare people, in initial training, with a foundation of broad skills which can be adapted and updated as trends become clearer. Updating will probably take place within continuing training. Examples of this process have already been mentioned with the example from Hungary in which short modules are developed in consultation with local companies. Other examples come from the Ukraine, Germany and Denmark where parts of the vocational education and training curriculum (between 20% and 30%) can be developed or modified by local schools/colleges in consultation with employers.

As changes stabilise, the new or adapted skills which are sustained can be fed back into the initial training curriculum. This 'cycle' is shown in the diagram below.



1.4 *The vocational education and training response to labour market changes*

It is possible to identify different types of response within the vocational education and training system.

Response	Examples/Commentary
Reactive	Short term initiatives and programmes to meet specific needs and to fill skills gaps. This is often started at the local level as part of the 'cycle' described above. This can be a particularly useful response to rapid changes in technology where new equipment or materials appear and require a special programme to train and update employees. There are examples of this from many countries, particularly the Ukraine and the former Yugoslav Republic of Macedonia, where short-term programmes were introduced to develop Computer Numeric Controlled skills.
Responsive	Developing new standards to manage the process of change. This response is best directed at gradual changes which can be partly anticipated and which will usually have an impact on changes in initial vocational education and training. As changes become clearer and more stable, vocational education and training planners and the social partners can start to change initial training standards to meet the new requirements to keep curricula up to date and in line with 'best practice'.

	Response	Examples/Commentary
		Groups can be convened with the specific role of monitoring changes in the labour market and suggesting changes to training standards. In Lithuania, 14 Industrial Lead Bodies with tri-partite membership perform a similar function, advising vocational schools and the newly established Methodological Centre for Vocational Education and Training.
Strategic		<p>Developing vocational standards and programmes which anticipate changes in the labour market in advance of their impact is often only possible when there are changes in legislation which can be anticipated well in advance, as mentioned above.</p> <p>Other strategic changes include the broadening of occupational families and the introduction of core skills to give future employees a broad foundation of skills that can be adapted as new labour market needs emerge.</p>
		When significant changes in the labour market are identified, the vocational education and training system may respond at a number of different levels. Here are some examples.

1.4.1 *Levels of vocational education and training response*

	Response	Examples/Commentary
Policy initiatives		<p>Educational investment decisions, special initiatives and measures, legislation and guidance. These are relatively long term measures, although special initiatives can have some impact in the medium term. The tendency is for policy initiatives to favour broad-based training and the development of core skills.</p> <p>Pilot projects are often set up to test new initiatives and educational incentives in the form of grants, or tax relief may be offered to training providers, companies and individuals.</p> <p>In periods of particular turbulence, special groups or 'task forces' may be set up to examine and report on trends, and to make recommendations for change.</p>
Curriculum design		Setting up course committees and design teams to modify and update the curriculum. This is in the medium-term but if local flexibility is permitted, there can be a short-term impact.
National standards		National specifications set by representative bodies or state ministries. These tend to be medium to long-term, although there are some examples (mainly from Germany) where a standard has been modified in under a year. If special groups are set up to scan the environment for specific signals then the time scale can be reduced dramatically.
Developing local partnerships		Local partnerships between vocational schools / colleges and companies / social partners can have an effective short-term impact. Partners can work jointly on skills analysis, and placements of trainers in companies and company staff in colleges can be used to develop a high level of mutual understanding.

1.5 Evaluating the response of the vocational education and training system

It is important to note that this section addresses the issue of evaluating the effectiveness of the vocational education and training system in **meeting the requirements of the labour market**, rather than evaluating the overall quality of the vocational education and training system per se.

1.5.1 Quantitative and qualitative measures

Both quantitative and qualitative measures can be used for evaluation. The criteria are summarised in the table below.

Quantitative measures	<ul style="list-style-type: none">■ meeting national standards and targets for the numbers entering training and achieving qualifications;■ average length of unemployment for different qualification levels, qualification types and sectors;■ numbers entering or re-entering employment from initial training;■ how long employment is sustained;■ type of employment entered (full time/part time, self employment etc. NB in some partner countries the proportion entering self employment may be an important measure);■ numbers and proportion of cohort achieving qualifications and certificates (overall);■ numbers and proportion of cohort achieving qualifications and certificates at defined levels;■ numbers and proportions in different pathways (i.e. 'vocational', 'academic' etc.)■ numbers progressing to higher levels of vocational training;■ tangible impact on the performance of organisations and enterprises (turnover, market share, productivity, profitability, quality improvement, customer satisfaction);■ level of in-company continuing training (including requests for training provision and support);■ reduction in reported skills shortages and 'hard to fill vacancies'⁹;■ economic indicators (reduction in poverty, reduction in accidents/industrial disease, rise in GDP etc.).
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⁹ In the UK a distinction is made between skills shortages and 'hard to fill' vacancies. The number of 'hard to fill' vacancies is the difference between the total labour market demand for a skill and the total labour market supply. This may be a function of a genuine failure of the labour market to respond in time to changing demands in industry (which is a skills shortage) but this may also be caused by a lack of labour market competitiveness (low rewards, bad working conditions, unattractive location) or the setting of unrealistically high standards for recruitment. Some skills shortages may be experienced by employers - but may not result in a 'hard to fill' vacancy. Shortages may be internal, within the existing workforce, and employers may choose to respond by reducing the level of service or product quality or accepting reduced efficiency.

Qualitative measures	<ul style="list-style-type: none"> ■ student/trainee satisfaction; ■ the quality and appropriateness of the learning process; ■ employer satisfaction; ■ meeting social goals (e.g. greater access for underprivileged groups, reduction in 'social exclusion', increase in general educational level); ■ improved motivation and self esteem; ■ willingness and ability to participate in continuing education; ■ changes in organisational culture.
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Not all of the criteria suggested above will be relevant in each case. In different partner countries, national policies will vary so different criteria will be chosen.

We should also note that many of these criteria, particularly some of the qualitative ones, are extremely difficult to measure¹⁰, although this does not mean that they should be ignored. In particular, the level of employer satisfaction with the graduates of vocational education and training programmes should be closely monitored.

1.5.2 *A framework for evaluation*

A useful framework for evaluation is suggested by Nils Asmussen¹¹, in which he summarises the work of previous researchers. Asmussen suggests that there are four evaluation 'levels':

Evaluation Level	Explanation
1. Reactions	The degree of satisfaction expressed by participants - typically measured by means of reaction questionnaires.
2. Learning	Assessment of the knowledge and skills learned and the attitudes which have changed, ideally measured before and after the training programme.
3. Job behaviour	Changes in participant job behaviour, preferably measured by data collected before the training programme and about three months after the programme (to check whether behaviours have been sustained).
4. Results	Changes in organisation that can be directly attributed to the training programme. Best measured by existing management or production information systems.

Although this research covered continuing vocational education, the results are also relevant to initial vocational education. In initial training, reactions are usually measured very effectively through the assessment and certification process. However, as Asmussen notes 'research in the area shows that data is not normally collected'.

¹⁰ Some of the issues involved in evaluation are discussed in the CEDEFOP report, 'Evaluation of quality aspects in vocational training programmes, Synthesis Report', Erwin Seyfried, 1998.

¹¹ Nils Asmussen, Training Evaluation, CUE Consult Ltd, Aarhus, Denmark, 1996.

1.6 Summary

During this study a number of important themes have emerged which suggest ways in which vocational education and training standards can be developed to respond to changes in the labour market. These changes are to the content of occupations, rather than the numbers employed. The themes are summarised below.

1.6.1 Major themes

Vocational education and training response	Commentary	Examples
Broad occupational families	There is a tendency for occupations to be grouped into broader occupational groupings or 'families' for initial training purposes, rather than narrow occupations and jobs. The emphasis is on broad based training in relatively stable occupational skills, which can be adapted as the content and structure of jobs change.	In Germany, the 350 training occupations are being reduced to less than 300. Russia recently adopted a list of 270 training occupations, the Ukraine, 260 and Turkey is developing some 250. Similar changes are occurring in many partner countries.
Broader descriptions of work activity - 'functions' and 'outcomes'	Because job content and work tasks change so rapidly, there is a trend for work content to be expressed as functions or outcomes, which allows for changes in technology and work organisation.	The UK used a method called 'functional analysis' between 1990 and 1997 to analyse occupations. Although no longer mandatory, the method is still widely used. Germany describes 'work tasks and functions' in its training curricula, as does Turkey, assisted by the German research institute BIBB, using 'writing teams' made up of practitioners from the trade/occupation. The Czech Republic describes 'sets of work activities'.
Core skills development	Core skills are specified as part of the vocational curriculum to prepare people for future change and adaptability. Together with the broad-based occupational family approach, this prepares people for flexible employability in a wide range of potential jobs.	The UK 'key skills' have to be identified within vocational education and training standards and qualifications. The same key skills are being introduced into secondary schools as a separate qualification and will be also be used at university level. Similar developments may be seen in all partner countries. As one respondent commented, 'the demand for broad-based qualifications and the need for core skills is so clearly understood that there is no need to comment'.

Vocational education and training response	Commentary	Examples
Flexible learning design - modularisation	Curricula and qualifications are broken into 'modules' or 'units' which can be combined in different ways to give flexibility in learning design. Combinations of modules can be developed to meet local, company, sector or national needs.	There are examples of this trend in almost all western European and partner countries.
Flexible learning delivery - open/distance learning and work based learning	Although this is becoming common in continuing vocational education, flexible delivery is also a growing feature of initial training. Open and distance learning is encouraged by the development of computer technology. Work based learning, combining vocational education with on-the-job training, becomes more important as technologies change so rapidly that vocational schools and colleges are unable to keep pace with the rate of change.	The NVQs in the UK have to be suitable for flexible delivery. NVQs cannot be delivered solely through a mandatory course of fixed duration. Work based learning routes are the most common form of delivery for NVQs, particularly in the Modern Apprenticeship.
Flexible qualification design - local flexibility, 'core and option' systems	Mandatory national curricula and qualifications are made more flexible by allowing local vocational education and training providers to specify a proportion of the curriculum to meet local and regional needs. Modular and unit based qualifications may be offered as a common 'core' of mandatory units, with options chosen by students to reflect personal preferences and local, sector and company needs.	In Germany, Denmark and the Ukraine, local vocational education and training providers are permitted to modify up to 30% of the vocational education and training curriculum to meet local and regional needs. In the UK, each NVQ is offered as a 'core' of mandatory units plus a number of optional units chosen by the candidate.
Flexibility in the development of standards	Vocational standards are often thought of as being inflexible and slow to respond to changes in labour market requirements. However, there are approaches and methods which are designed to allow standards (both occupational and vocational) to be updated quickly.	The Annex to Part 1 contains a discussion of this issue and an example of a 'flexible' standard.

Vocational education and training response	Commentary	Examples
Partnership approach to design and implementation involving the state, employers, employees (unions), vocational education and training providers and individuals	<p>It is becoming clear that all those involved in the development and employment of a skilled workforce need to contribute to the design and implementation of vocational education and training programmes. This is not just a matter of the importance of democratic processes. Without employer and employee involvement, vocational education and training systems can quickly become out of date.</p>	<p>In Germany employers and trade unions assisted by vocational education and training-researchers of the Federal Institute for Vocational Education and Training (BIBB) have designed four new occupational standards in less than one year in the field of information and communication. They have been adopted as national standards by the government and, over the last two years, more than 10,000 apprentices have taken up training programmes.</p> <p>Poland has Employment Councils at three levels (state, region, local), consisting of trade unions, employers organisations, educational authorities and local or central government. The Councils advise on labour market changes and, at local level, assist in curriculum development.</p>
Analysis of labour market needs in terms of content	<p>Although accurate statistical information is critical to vocational education and training planners, it is important to review and update the content of occupations to provide the basis for vocational education and training curriculum design. The traditional process of training design may be too slow for periods of rapid change.</p>	<p>In the Czech Republic, a number of branch groups, comprising social partners and vocational education and training planners, collect and process information on new qualification requirements which is fed back to the national vocational education and training research institute.</p> <p>Germany is developing a system to spot the changing needs of the economy. Job advertisements are scanned, company retraining measures and continuing training activities are monitored to identify early reactions to changes in the labour market.</p> <p>In the UK, each National Training Organisation (NTO) is required to conduct a 'Skills Foresight' analysis. The guide to this process states 'one of the core activities of an NTO is the gathering and interpretation of labour market information and the assessment of current and future skill needs'.</p>

1.7 Conclusions

The labour market has changed from a process of slow and even development to one of turbulence and rapid change. This requires an approach to labour market analysis based on the predicted and actual changes in the content of occupations, which is then expressed in vocational education and training standards. These standards are used to develop vocational education and training programmes which are more in line with the needs of the labour market.

There are significant areas of change which have an impact on the development of vocational education and training standards. The most important are changes in technology, legislation, markets and organisational culture. Some of these changes are extremely rapid and difficult to predict (e.g. technology) whilst others are more easy to anticipate (e.g. legislation).

A realistic response to these changes is to prepare people, in initial training, with a foundation of broad skills that can be adapted and updated as trends become clearer. Updating will probably take place within continuing training. As changes stabilise, the new or adapted skills which are sustained can be fed back into initial training standards.

An effective vocational education and training response depends on both the type of change and the level of response. Rapid changes require a quick reaction, usually through continuing training. Longer-term changes allow vocational education and training planners to develop standards to support the change process (the 'responsive' type of change) or to develop standards which anticipate the change and lead practice (the 'strategic' response). The level of response may vary from government policy initiatives, the design of new curricula, the development of new national standards and the development of local partnerships.

The response of the vocational education and training system should always be evaluated and both quantitative and qualitative indicators should be used.

Finally, there are clear themes emerging in western and eastern Europe which typify the response of the vocational education and training system to labour market changes. These are:

- Broad occupational families;
- Broader descriptions of work activity - 'functions' and 'outcomes';
- Core skills development;
- Flexible learning design - modularisation;
- Flexible learning delivery - open/distance learning and work based learning;
- Flexible qualification design - local flexibility, 'core and option' systems;
- Flexibility in the development of standards;
- Partnership approach to design and implementation involving the state, employers, employees (unions), vocational education and training providers and individuals;
- Analysis of labour market needs in terms of content.

ANNEXES

Annex (part I): Flexible standards

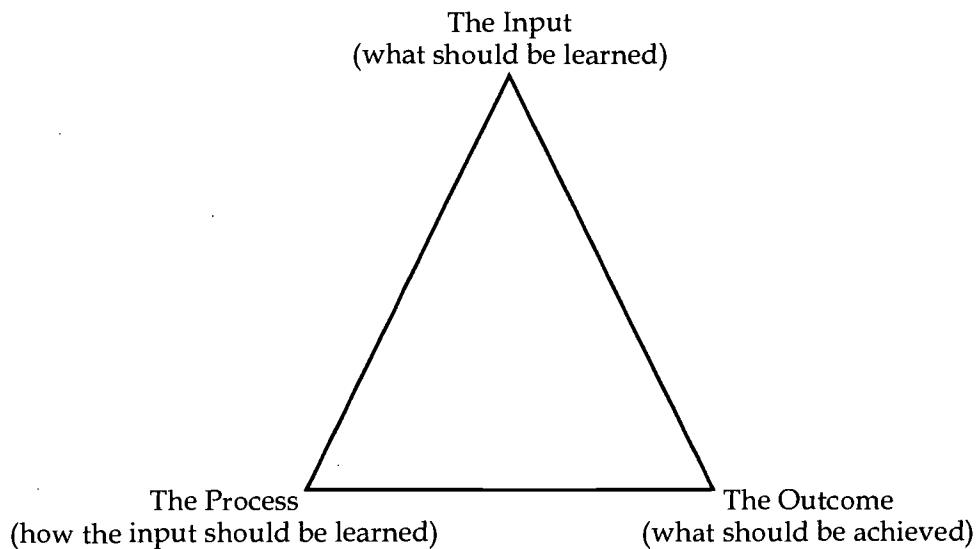
Conventionally, we think of vocational education and training as having three components:

The input: the description of what should be learned (usually called the curriculum);

The process: a description of the way in which learning will take place (which will include the location and duration of learning, learning methods etc);

The outcome: the level of competence which the learner is expected to achieve (this may be described as learning outcomes for a training or educational standard or a performance outcome for an occupational standard).

We can express the relationship between inputs, processes and outcomes as a simple diagram:



In different vocational education and training systems the relationship between these components will be different, as will the degree of specification. This is important if we are to consider the flexibility of the standard in response to changes in the labour market. If all three components are closely defined, then the compete standard becomes inflexible and it is difficult to respond rapidly to change. Here, the diagram is a useful analogy: if we fix the three points of a triangle, then it cannot move in any direction.

Flexibility in response to the labour market

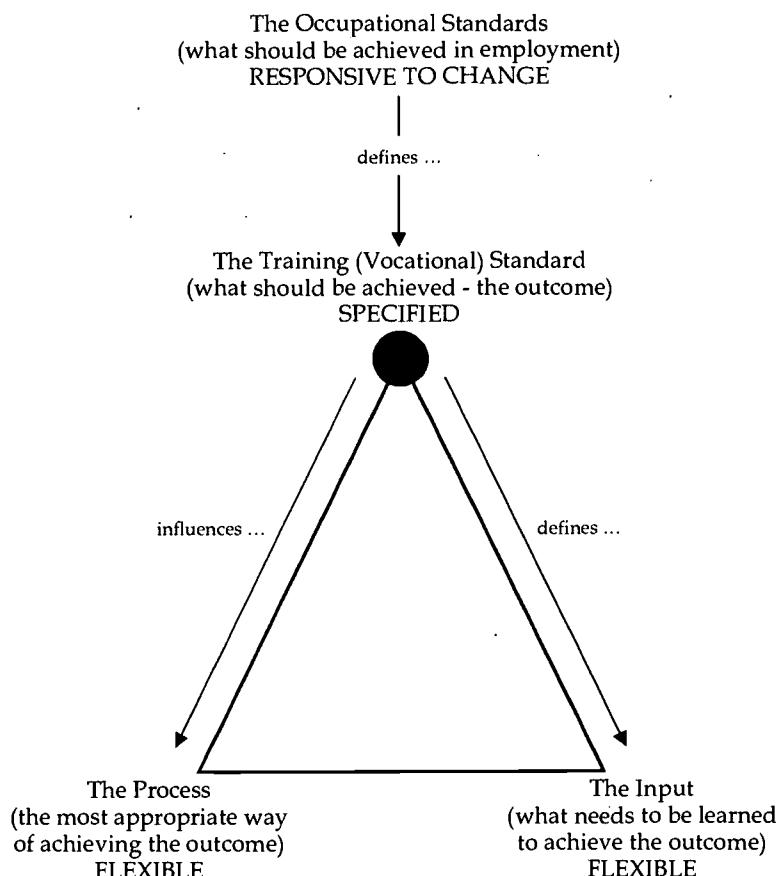
Nevertheless, it is possible to have standards which allow some flexibility. Here the choice is whether the input, process or outcome is allowed a degree of flexibility.

If we fix (specify) the input (the curriculum) then we can allow flexibility in the learning process. The curriculum can be delivered in a number of different ways to meet labour market needs. This may be through open and distance learning, self-study, short modules as well as full time training programmes. But if we only fix the input, then the outcome can vary as well because we have not specified what the person has to achieve, only what they have to learn.

Clearly, we have to specify the outcome, and this is what is meant 'standards-based' vocational education and training. The vocational education and training system is based primarily on what people need to achieve. This is what we specify first, precisely what they learn and how they learn it are secondary issues.

This is different from some traditional vocational education and training systems in which only the input and processes were specified. In these systems a curriculum committee would meet to define the input and the learning processes were already fixed through vocational schools, colleges or dual systems. This meant that the outcomes could vary.

In standards-based systems the outcomes are defined as closely as possible in line with the expectations of employment and thus educational standards are set against occupational standards. This, in turn, will define the input (what has to be learned to achieve the outcome) and the process (the most appropriate method of achieving the outcome) as shown in the diagram below.



This model requires vocational education and training planners and vocational education and training professionals (teachers, tutors) to be directly involved in the planning of the inputs and processes (usually within a general framework of guidance and quality assurance) in order to meet the required outcomes.

But even this model can lack flexibility if the development of the outcome standard is a slow process. The answer is to make the standards development process flexible as well, and this can only be achieved by separating the components of the outcome standard.

To do this, three components can be distinguished:

1. A description of what needs to be achieved.
2. The performance requirements.
3. The range of different variations to which the standard applies.

Here is an example:

What needs to be achieved	The performance requirements	The range of different variations
Reproduce copies of documents	<p>Technical requirements:</p> <p>Checking that all the required consumables are available and obtaining them if necessary;</p> <p>Checking that the equipment is ready to use;</p> <p>Adjusting the equipment to take account of the quality of the original and the printing requirements;</p> <p>Operating the equipment according to the manufacturer's instructions;</p> <p>Producing the number of copies that are needed;</p> <p>Checking that the copies meet the quality required;</p> <p>Reprinting any copies which do not come up to the required standard;</p> <p>Resetting the equipment for the next person to use.</p> <p>Managing the process:</p> <p>Making sure that adequate stocks of materials and consumables are always available;</p> <p>Responding to breakdowns by following problem solving guides;</p> <p>Asking for help when the problem is beyond your competence.</p>	<p>Consumables:</p> <ul style="list-style-type: none"> ■ copy paper; ■ other printing consumables (transparencies, card etc); ■ toner. <p>Printing requirements:</p> <ul style="list-style-type: none"> ■ single sided copies; ■ double sided copies; ■ collated copies; ■ stitched and bound copies. <p>Quality requirements:</p> <ul style="list-style-type: none"> ■ clear and unmarked; ■ square on the page.

Notice that the standard is written in a way which avoids any mention of the precise technology or method which is to be used. This is deliberate, and makes the standard more flexible. Clearly, this standard is about photocopying, but photocopiers are not mentioned at all. This is particularly important for the statement of 'what needs to be achieved' and the 'performance requirements'. In

the 'range of variations' it becomes clear what technology is being used because 'toner' is mentioned. We know that there is a range of variations because the range 'category' is highlighted in the performance requirements by the use of bold type.

The significance of this approach is that this standard could also be used to describe printing using other technologies and methods, for example, spirit duplicating and offset litho printing, and the differences can be made explicit simply by changing the range of variations. Instead of 'toner' we would insert 'printing master' or 'printing ink'.

By using this method, vocational education and training planners can track changes in technology and adjust the range of variations, the rest of the standard remains the same. In the future, new requirements can be added to the range, because whatever changes we can imagine, office workers will still need to be able to 'reproduce copies of documents'.

If technologies change substantially, changes can also be made to the performance requirements and also to the outcome statement, but for most changes only the range needs modification.

For vocational education and training planning, an outline curriculum can be prepared to meet the performance requirements, but precise details may have to be developed locally to meet the specific requirements in the range of variations.

This example is relatively simple, but the approach can be used to define standards in very complex occupations, including professional activities.

PART II

Identifying labour market requirements

2.1 *Introduction*

Part II of the publication has been developed as one of the key outputs of a European Training Foundation project: "Co-ordination of the European Training Foundation Training Needs Analysis and Standards Initiative", established to identify and develop methodologies for vocational education and training standards in Estonia, Latvia, Lithuania, Poland, and Slovenia.

The project focused on methodologies for vocational education and training standards by conducting a formal review of the methodology being applied and the key actors and institutions involved in the process of labour market needs and the definition of vocational education and training standards. Consultations with the beneficiary country project management during the formal review confirmed the interest and need for further assistance in the area of labour market planning and research.

Part II spells out in more concrete terms the purpose of collecting and analysing economic and labour market data as a means of ensuring that education and training policies and programmes remain relevant to the needs of the labour market and the wider economy. As market demands change at a more rapid pace, and as greater international competition prevails, it is increasingly recognised that both the quantity and quality of available human resources are a key element in ensuring that individual firms, regions and national economies can respond positively to these developments.

Part II was prepared by Martin Dodd of FAS International Consulting, Ireland. He has considerable professional experience in the area of vocational training, human resource development and business consulting both in Ireland and overseas. In his capacity as the long-term technical adviser to the EU Phare vocational education and training reform programmes he has been directly involved in vocational training reform in many Central and Eastern European countries since 1992. In this context, he has been active in assisting programme management units with the implementation of planned outputs in the components of curriculum, teacher and management training, EU school partnerships, policy development and dissemination, regional development and national standards development.

Annexes to Part 2 were prepared by (Estonia) Terry Corconan, Senior Economist the Irish Training and Employment Authority, (Lithuania and Slovenia) Candy Murphy, Senior Labour Market Research Specialist, Goodbody Economic Consultants.

2.2 *Labour market forecasting*

2.2.1 *Introduction*

There are fundamental differences between economists of neo-classical and structural schools about the need for labour market forecasts which stem from their views about the way labour markets work. The neo-classical group argues that labour markets are flexible, that skills substitution is

relatively easy, and that wage differentials adjust to quickly eliminate any imbalances which affect particular occupations. They see very little need for such forecasts and even less for government intervention in the labour market.

The structural group argues that labour markets are relatively inflexible, that skills substitution is difficult, and that wage differentials do not adjust quickly. Their view of the labour market convinces them that there is a need for labour market forecasts to identify the size and characteristics of potential imbalances in particular occupational labour markets. They believe that such forecasts would facilitate the development of educational and vocational programmes that would ensure that the economy would be provided with trained labour in the quantity and quality needed to reach target rates of economic growth.

The structuralist position attracted the attention of policy makers in Europe and North America in the early 1960s when aggregate demand was quite strong but there were persistent surpluses of poorly educated workers in some occupations and shortages of well educated workers in others. The structuralists argued that labour market forecasts could be used by governments to intervene in educational planning systems to prevent future imbalances in occupational labour markets. They believed that the forecasts should be made for up to 10 to 15 years ahead because they thought a long lead-time would be needed to adapt the supply of qualified labour coming out of the educational system to the expected requirements. Therefore the governments at that time began to give attention to the supply side of the labour market and attempted to use education and training systems to adapt the outflow of qualified labour to forecasts of the occupational needs of the economy.

The objective was to try and ensure a smoother adjustment of supply to demand in occupational labour markets than would have been possible through reliance on the market mechanism alone. These hopes were not realised because many of the early forecasts of labour supply by occupation or qualification, at the level of detail attempted, were rather inaccurate. The disappointing performance of the early forecasts lent credibility during the 1970s to the criticisms, which had been made of labour market forecasting from theoretical and practical perspectives. These criticisms were made on the grounds that labour market forecasting is unnecessary because labour markets respond of their own accord to the economy's employment needs; that such forecasting is impossible because some of its underlining assumptions are wrong; and that labour market forecasts are bound to be inaccurate because weaknesses in the different components of the projection procedure make it extremely difficult to estimate labour requirements with an acceptable margin of error.

These criticisms were rejected because (a) there is evidence from many countries that labour markets do not automatically respond to occupational imbalances (b) subsequent investigation of the underlying assumptions suggested they were reasonably well based, and (c) labour market forecasts have met acceptable levels of accuracy when economic development has been in line with underlying assumptions and their general performance has been as good as that of other economic forecasts.

Even though labour market forecasting has been the subject of criticism, policy makers have continued to look to labour market planners and economists for answers to their questions about the role of education, training, and the labour market in economic development. Labour market specialists continued to work on these questions and they have responded to the criticisms by reducing the forecasting period from long-term to medium-term and by switching the focus of their forecasts from educational planning to the provision of general guidelines for active labour market policies in the area of training, job placement and job creation. These were important changes. The shorter time horizon for the forecasts made them more relevant.

The switch in focus took account of the evidence that the relationship between occupations and education is the weakest link in the chain of education planning.

Labour market forecasters now emphasise that their main objectives are:

1. To highlight the implications of existing occupational trends;
2. To provide information for policy makers on the current position of occupational labour markets and the sort of changes which might occur in the future;
3. To bring to the attention of policy makers the affects which different courses of action could have on the level and structure of employment in the future.

These objectives contrast with previous uses which involved trying to pinpoint imbalances in the occupational labour markets, sometimes at a considerable level of detail, for periods far into the future. The new approach means that labour market forecasts should be used as an input into medium-term strategic thinking about the future by decision makers in government, education and training, business, and the trade unions. Such forecasts can help them to anticipate and to respond quickly to changing circumstances in occupational labour markets.

2.2.2 *Labour market forecasting experience in OECD countries*

Comprehensive labour market forecasts for France, the United States, Canada and West Germany were first made during the 1960s while those for the United Kingdom and the Netherlands were not made until the 1970s and the 1980s respectively. There are important differences between these countries in the way in which the forecasts are made. The United States and Canada have never been committed to economic planning, yet labour economists working for their governments believe that comprehensive labour market forecasts provide a useful means of evaluating prospective developments in occupational labour markets.

European countries have been more committed to economic planning. France has drawn up ten economic plans since the end of the Second World War and it included official occupational forecasts in the fourth, fifth, sixth and seventh plans. Other countries have engaged in economic planning intermittently and have sometimes included official labour market forecasts when national development plans have been issued. However their labour market forecasts have generally been made by independent research organisations under contract to the national training or education authorities.

Despite the differences in political responses to labour market forecasts in North America and Europe the demand for such forecasts remains strong. The current position is as follows:

- the Bureau of Labour Statistics and Employment and Immigration in Canada prepare comprehensive occupational forecasts for the United States and Canada respectively which are published every two years;
- the Commissariat General du Plan, commissions labour market forecasts for France from independent research organisations, but it does not include the detailed results in the overall French plan, although it does allow publication by the research institute making the forecasts;
- the Institute for Employment Research at Warwick publishes annual occupational forecasts for the United Kingdom for broad occupational groups;
- the Institut für Arbeitsmarkt- und Berufsforschung der Bundesanstalt für Arbeit (Institute for Employment and Occupational Research at the Federal Institute of Labour) at Nuremberg, commissions forecasts by "branch of activity" for the Federal Republic of Germany from independent research organisations which may publish the results;

- the Researchcentrum voor Onderwijsen Arbeidsmarkt (Research Centre for Education and the Labour Market) in Maastricht, publishes regular labour market forecasts for the Netherlands commissioned by the Dutch Ministry of Education and Science.

The basic census data required to make labour market forecasts is supplemented in these OECD countries by up-to-date information collected through regular occupational and industrial surveys and as a result of frequent consultations with business, trade unions and education specialists. A considerable amount of research is also done on the determinants of employment in a wide range of occupations and on changing employment patterns. Further details on the collection of this data can be found later in this publication.

2.2.3 *Performance of labour market forecasts*

Evaluation of the quality of labour market forecasts has been relatively neglected. However, some evaluations have been made of the labour market forecasts that were made for the United States, Canada and France during the 1960s and the 1970s. These evaluations show that the early forecasts for broad occupational groups in these three countries were reasonably accurate while, in general, those for more detailed occupational groups were not.

In the light of this experience, labour market forecasters re-appraised their methods, improved current information on the labour market, and changed the emphasis of the forecasts away from educational planning to the provision of information for an active labour market policy in the areas of training, job placement, and job creation. They also presented the forecasts in a different way. Rather than presenting them to policy makers as prescriptions for the future they were presented as broad indicators which ought to be taken into account with other economic analyses before specific decisions are taken.

This new approach and change in emphasis has made a valuable contribution to the decisions which policy makers and individuals have to take with regard to occupational choice and the provision of education and training.

2.2.4 *Conclusions*

There are five conclusions which can be drawn from the labour market forecasting experience of a number of OECD countries since the 1960s:

1. Labour market forecasts are made because they provide decision makers and individuals with very useful information with which to answer important questions relating to education, training, and occupational choice;
2. It is possible to make labour market forecasts if data classified by occupation and industry are available from a population census or a labour force survey and sectoral output projections are available from an input-output or macro-econometric model;
3. The labour market requirements method is the most appropriate means of making the forecasts;
4. The procedures used to make the forecasts in some countries are now quite complex but simpler procedures which give quite acceptable results are also available;
5. Labour market forecasts have met acceptable standards of accuracy in terms of broad occupational groups and they have been helpful to a wide range of organisations and individuals in providing information on the employment outlook by sector and occupation.

2.3 *The needs and benefits of labour market and economic analysis based on the experience and work in this area*

Candy Murphy and Terry Corcoran

Economies and individual firms increasingly recognise that access to the required level and type of human resources is a key ingredient for commercial success. As such it cannot be left to chance. Rather, mechanisms must be put in place to ensure that such human resources are available. This in turn requires labour market planning by the state, in co-operation with the social partners.

The purpose of such planning is that:

- as far as possible the current and future skill needs of both individual companies and the economy as a whole are identified;
- labour market entrants leave the education and training systems with the type and level of skills and qualifications required in the economy;
- adequate training and development systems are in place to facilitate the updating and upgrading of the skills of those already in the labour market in response to changing economic requirements. This applies to both the employed and unemployed members of the labour market, and the tasks are carried out by both the state and individual enterprises;
- adequate information is available to assist individuals both entering and moving around the labour market to identify changing skill needs and related education and training provision and qualifications; and,
- adequate information is available to assist employers to identify their companies' current and evolving skill needs, to provide potential employees with the required skills, and to upgrade the skills of existing employees.

As the above objectives clearly illustrate, the identification of changing skill needs is the key element of labour market planning. Significant changes cover both the quantity and quality of skills required. To identify such changes in skill requirements it is essential to understand the dynamics at work within the wider economy. This is because wider economic and commercial issues largely determine human resource requirements. These issues include changing market, technological, legislative and other requirements, and, increasingly, the need to match and exceed the value and quality of competitors. To identify changing skill needs requires an understanding of all the ingredients that have an impact on the labour market and the skill and qualification needs of individual firms.

Why can't labour market planning be left to the market? This is not possible because:

- insufficient information is available to both employees and employers about changing skill needs;
- employers, particularly SMEs, often have neither the time nor the expertise to undertake labour market planning;
- it is generally considered that employers tend to take a short term view of their human resource needs;

- it takes considerable time to develop the skills that are in demand. Changes are required in the education and training systems and time is needed for these changes to feed through into the labour market (e.g. required changes in a 3 to 4 year education programme will take 5 to 6 years to feed through the system into the labour market); and
- if insufficient people with the required skills are available, poaching will increase among companies and wage and price pressures will rise with knock on effects in the wider economy. (Interestingly, if poaching becomes significant it becomes a disincentive to train).

It must also be pointed out that this type of labour market planning is extremely difficult. Consequently, it is best carried out in co-operation between the state agencies involved, these agencies and the social partner representatives, and individual employers and employees.

This means that to be effective:

- education and the appropriate ministries must work in active co-operation and consultation to develop a co-ordinated and speedy response to changing skill needs;
- state organisations must work with the social partners to identify changing skill needs and the factors that will influence those needs; and
- individual employers and employees must be consulted since they know most about the actual requirements of specific occupations.

To help understand the purpose and benefits of labour market analysis it is worth looking at what is likely to happen without such analysis. It is likely that:

- education and training provision will become increasingly irrelevant to the needs of the labour market;
- there will be an increasing mismatch between the skills required in the economy and the skills and qualifications of potential and existing employees. This will lead to increasing unemployment and a loss of competitiveness of firms within the economy;
- there will be increased pressure to replace labour with capital, companies will increasingly poach workers or seek to recruit internationally; and
- international companies will increasingly relocate to other economies and new companies will be less likely to locate within the economy.

Taking these two groups of factors into account, the purpose of labour market analysis can be summarised as:

- to identify the skills and qualifications required in the labour market which are available and able to contribute to the competitiveness of individual firms within the economy;
- to provide the education and training system with the information necessary to identify the implications of such changes for education and training programmes, and the resources and commitment to adapt provision accordingly; and
- to provide the best possible match between the demand for and the supply of labour, thus minimising skill shortages and gaps, and maximising employment opportunities; thus ensuring that an effective labour 'market' operates within the economy.

2.4 *Methodologies for identifying labour market needs*

The key mechanisms for effective labour market analysis are:

- information;
- research;
- consultation; and
- continuing monitoring and evaluation.

The key methodological tools are:

- sectoral/occupational analysis;
- national/regional/company level analysis;
- quantity/quality analysis; and
- identification of needs/adaptation of provision.

These methodologies are set out in Annex 2. Later sections of the publication will focus on the institutions and actors that should be involved in the process of adapting provision. First, we will outline the methods that can be used to:

- identify the labour market needs of particular sectors (both quantitative and qualitative); and,
- identify the changing labour market needs of particular occupations (both quantitative and qualitative).

2.4.1 *Sectoral analysis*

Sectoral studies are a key mechanism for identifying changing skills and training needs. This approach has the following advantages:

- it relates labour market and training needs to business development needs;
- it identifies future business trends and acts as an early warning system for the type of changes that are required in the training system to meet changing business needs;
- it involves in-depth research of a particular sector, overseen by a steering committee representative of the various interest groups involved (social partners, key employers, education and training providers and relevant government department and state agencies); and
- it concludes by agreeing an action plan for meeting the training and development needs of a sector that is supported by all the relevant stakeholders.

2.4.2 *Information requirements*

For labour market research to be effective it must be based on sound information. For sectoral studies the following details are required:

- numbers of companies by size and subsector;
- numbers employed by subsector and trends;
- numbers employed by occupation;

- output by subsector and trends;
- estimates of labour turnover;
- exports by subsector and trends;
- numbers of vacancies by subsector and occupation; and
- numbers leaving the education and training system by occupation and skill level.

If some of this information is not available it can be collected as part of a sectoral study. This can be done through surveys of employers and also through the collection of information directly from employment offices and from education and training providers. In other cases it may be necessary to estimate figures, e.g. staff turnover, by looking at available information on other countries, other sectors etc. The quality and robustness of the information available has a significant impact on the quality of the market, manpower and other forecasts that will be made as part of the sectoral study.

2.4.3 *Setting up a sectoral study*

Procedure for setting up of a sectoral study

- Set up steering group
- Agree specification/tender list
- Send out tenders
- Steering group assess tenders
- Recommendation tender approved
- Monitoring of study by the steering group

The figure above outlines the procedures to be followed in setting up a sectoral study. Firstly, it involves establishing a steering group to represent the various interests involved: sectoral experts from the public sector (ministries, state agencies, universities), social partners representatives, key employers and human resources experts from both the education and training providers and from key companies in the sector. This acts as an effective consultation mechanism.

This group will be closely involved in the specification and commissioning of the study, the selection of contractors and the monitoring and evaluation of the project.

2.4.4 *Research*

To understand the labour market needs of particular sectors it is necessary not only to have good information and effective consultation mechanisms but also to carry out in-depth research at regular intervals. This research should be carried out by a combination of labour market and sectoral experts and should be overseen by a steering committee representative of the groups outlined above.

Sectoral studies should adopt the following approach:

- analysis of the current situation in the sector, including industry composition, competitive position, markets, technology, personnel and skills, education and training supply;
- identification of key change factors for the future, including competition, technologies, legislation, market changes, labour market trends, identification of labour market and skills gaps;
- proposal for a future strategic direction for the sector, covering markets, technology, work organisation, industry/business developments;
- analysis of the employment, skill and training requirements of the strategy, including employment forecasts, skill and training requirements;
- recommendations for a human resource development strategy for the sector, including policies and programmes required; and
- development of a human resource action plan for the sector, covering issues such as management development, skill development, recruitment strategies, training programmes etc., and identifying the actions required by industry as a whole, education and training providers, individual companies, and other relevant government ministries and agencies.

The success of a sectoral study is influenced by a number of factors. These are:

- the establishment of close links with key players in the sector;
- the coherence of the report's layout and findings;
- the presentation of strong, clear recommendations brought to light by the analysis;
- the development of an action plan for implementation by the Steering Group that clearly spells out the respective roles and responsibilities of those involved, costs and funding options;
- agreement on the implementation of this action plan by funders and by industry representatives; and
- agreement on a workable system for monitoring the implementation and impact of the action plan and updating the study's findings at regular intervals.

There are many benefits to be accrued from the state taking a lead role in commissioning sectoral studies. These are:

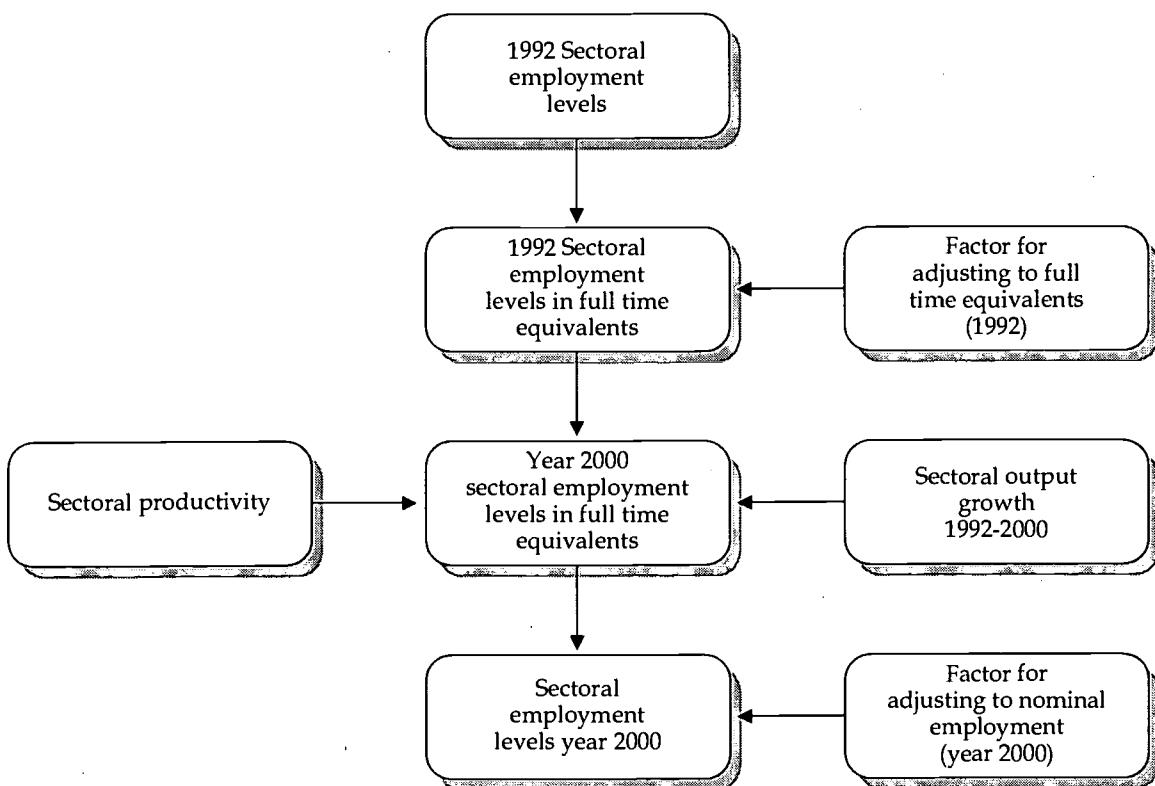
- benefits accrue beyond individual firms;
- resulting actions are compatible with Government Policy;
- resulting strategies are in line with developments overseas;
- they have a strong impact on indigenous firms/SMEs;
- initial and continuing training needs are identified;
- management as well as workers' training and development needs are identified.

2.5 Labour market forecasting - An integral part of sectoral studies

An integral part of sectoral studies is the preparation of forecasts of the future demand for labour within individual sectors. By necessity, this must be broken down by occupation to allow for action to be taken by the education and training system to meet this demand. Within the context of a sectoral study, such forecasts can draw on a wide range of information that link labour market demand to business development forecasts, in terms of output growth, market growth, productivity growth, estimates of staff turnover etc.

This is shown below.

Estimating total sectoral employment for the year 2000



2.5.1 Occupational analysis

Sectoral studies are an effective means of identifying future labour market and skill needs and of identifying key 'change' occupations. However, alone they do not provide enough information upon which to up-date the curricula, standards and qualification requirements of a particular occupation. This can be done through occupational analysis. In this method, one occupation or family of occupations is examined in depth.

Occupational analysis involves the following stages:

1. identification of work activities and knowledge required for a specific occupation;
2. development of standards of performance for each work activity;

3. grouping of work activities into modules and levels;
4. development of curricula for each module;
5. development of recognised certification system for each module;
6. development of recognised qualifications for a group of modules;
7. obtaining acceptance of the proposed system from all the key stakeholders.

Occupational analysis methodology

This is shown in the diagram below. This process has the following strengths:

- it starts with the work activities carried out in employment and identifies both core and specialist activities, and activities that are likely to be either more or less important in the future;
- it includes not only the specific skills required in a certain occupation, but also the related knowledge and personal skills required;
- it develops standards that spell out what is required to perform the work activities to the required level;
- it involves both employers and training experts in the development of the occupational standards, and in the development of the related education and training curricula and qualifications required;
- it encourages a modular system that can allow for a flexible approach to the acquisition of related qualifications which, in turn, enables both new entrants and existing employees to obtain the required skills; and
- it facilitates the progression of employees from basic to more specialist and higher level qualifications.

Occupational analysis methodology

SOURCE	STAGES
POSTAL SURVEY	Identification of work activities <ul style="list-style-type: none">■ Practical■ Personal■ Knowledge
SUBJECT MATTER EXPERTS	Development of performance standards for each work activity
KEY EMPLOYERS	Validation of work activities and performance criteria by 10 key employers
POSTAL SURVEY	Categorisation of work activities as core, specialist, common and personal
INTERVIEWS	Grouping of work activities into modules <ul style="list-style-type: none">■ duration■ sequencing■ location of delivery

In carrying out occupational analysis it is necessary to develop a very in-depth and thorough knowledge of an individual occupation. It is therefore most effective to carry out such a programme of work in relation to key occupations, at least initially. Such key occupations can be identified through the sectoral studies outlined above.

2.6 *Institutional requirements*

2.6.1 *Consultation mechanisms*

Institutional mechanisms can be formal or informal. Both are essential and require the establishment of effective consultation mechanisms. Consultation in this area involves policy makers, education and training providers, labour market and training analysts, employer representatives, unions and individual employers.

Formal consultation can occur at the following levels:

- agreeing policy objectives for particular sectors;
- identifying factors that will have an impact on future labour market and skill needs;
- identifying future labour market and skill needs; and
- overseeing the adaptation of existing education and training provision to meet changing skill needs.

The type of consultation and expertise of those involved varies at these different levels. For instance:

Level	Institutions to be involved – Employer and Union.
Agreeing policy objectives	Senior ministerial representatives for specific sectors
Identifying factors that will impact on future manpower skill needs	Sectoral experts – universities, public & private agencies, ministries, employer and union representatives with responsibility for the particular sectors, key employers in the sector.
Identifying future manpower & skill needs	Human Resource (HR) experts- employers, state officials, agency officials, unions.
Overseeing adaptation of existing education & training provision	Representatives of education and training providers, ministerial and public agency representatives, private HR experts, employer/union representatives.

The effective identification of skill and training needs and the adaptation of education and training provision requires the co-operation of all the stakeholders identified above. If certain stakeholders do not participate in the consultation, the process of identification and adaptation will be weakened. For example, if employers are not involved, the changing skill needs of business may not be fully and accurately identified. If education providers are not involved the required changes in curricular, qualifications etc. may not be realised.

Ideally, the institutions involved develop a coherent and comprehensive approach to dealing with information they acquire through both consultation and research.

2.6.2 Expertise requirements and costs

As described above effective labour market analysis requires four ingredients; information, research, consultation and continuing monitoring and evaluation. In terms of consultation what is required is a commitment by the various interest groups, including social partners, employers, education and training providers, vocational education and training experts, as well as relevant ministries and related agencies to devote time to oversee the carrying out of the research, allocate resources to the commissioning and implementation of the research, the collection of relevant information and to the implementation of the action plans that emerge following the agreed programme.

For gathering information, experts in labour market analysis, including statistical, labour market and information collection, are required (e.g. surveys, interviewing etc.). Such experts can:

- identify information requirements for effective labour market planning;
- arrange for the collection of the necessary information;
- analyse the information collected in a way that assists decision makers; and,
- communicate with non-experts on the implications of their analysis.

While international experts can assist in the development of new labour market information systems, it is essential that such expertise be developed in each country. This can be done by supporting labour market education programmes in the universities and colleges at undergraduate and post-graduate level, probably within economics/sociology departments. It is also possible to develop the skills of those already involved in such work through study trips abroad or through the provision of scholarships to acquire labour market qualifications in other countries (UK, USA etc.)

Labour market research and related expertise is required particularly, to carry out sectoral studies. Education and training expertise is also required both for sectoral studies and also to carry out occupational analysis. Such expertise can be gained in a similar manner to the approach outlined above. Sectoral studies are often carried out by international business consultancy firms that have access to a wide range of market, technological and legislative developments affecting particular sectors. It is important that these consultants work with labour market and training experts that not only have relevant technical expertise, but also have a thorough knowledge of conditions prevailing locally and nationally.

Vocational education and training experts can be developed by training secondary teachers and trainers, both from within the education and training system and from industry, to carry out occupational analysis. Such experts can receive valuable support from international experts and through study visits to other countries.

Sectoral studies require the allocation of funding to commission external consultants with the necessary expertise to carry out the work. Such studies can cost from 35,000 - 127,000 EUR to carry out and must be managed effectively.

Occupational analysis requires the allocation of resources already within the vocational education and training system or in industry to carry out the work. To carry out such work can require the allocation of the equivalent of one person year for each occupation to be studied.

Annexes (part II)

The information contained in the annexes reflects the activities undertaken in a selected number of partner countries under the European Training Foundation supported 'Training needs analysis and standards initiative'. Each annex/report includes a review of the current situation in the broad area of needs analysis and standards development, priorities and recommended future actions.

To ensure a maximum effect, the European Training Foundation and the partner countries agreed that the most appropriate type of technical assistance required under this initiative should be decided by each country. As a consequence, the technical assistance provided was tailor-made for each of the countries involved. Some common trends in terms of needs etc. were identified and these have been reflected in the annexes. However, the solutions and recommendations for future actions were based on the existing institutional arrangement within each country.

As with similar initiatives there is a question of what the concrete benefits to the partner countries has been through their participation in this project. Based on the countries highlighted in the report we can identify the following actions:

- Estonia piloted its first sectoral survey on the wood sector. Based on a detailed evaluation of the methodology used and the positive reaction from employer, trade union and a range of government ministries, further studies are being undertaken in the engineering and information technology sectors.
- Lithuania is at present piloting its first sectoral survey of the retail sector. A tripartite expert steering committee has been established to oversee all phases of the survey. It is intended to evaluate the results and methodology used before recommending future action in terms of identifying and responding to changing labour market needs in the Lithuanian economy.
- Slovenian experts have used the project as a basis of deepening their understanding of the methodologies and techniques practised internationally as a basis for enhancing the development of a more responsive and relevant vocational education and training/human resource development provision by the state and private sector in Slovenia. Future actions in this area will be based on other international models including the approach proposed under this project.

Annex 1 (part II): Labour market analysis in Estonia

Terry Corcoran¹²

Sources of labour market information in Estonia

Types of labour-market information and their importance

Labour market information of use to policy-makers and to other market actors can be categorised in a number of ways. For example, current and historical information can take the form of:

- **Type A:** Regularly-produced official data on employment, unemployment and the labour force, which can be used to identify aggregate quantitative trends by sector, occupation, age, etc;
- **Type B:** Occasional or ad-hoc surveys and enquiries limited either to specific sectors or to specific issues (e.g. labour shortages). These tend to provide more partial, but usually more detailed information;
- **Type C:** Enquiries or processes producing "softer" or more qualitative information. These tend to concentrate on issues such as the changing content of individual jobs; and
- **Type D:** On the supply side, data on the current annual outflow from the education system (both general and vocational education and training) can be an important supplement to Type A above.

A second issue is that of the extent to which the available information is "forward-looking", in the sense that it provides a basis for forecasting future trends. In this context, information of Type A can be used, to some degree, as a basis for projecting broad trends, and identifying potential major tensions in the labour market for reasonably aggregated groups of occupations or qualifications. Information of Type B can help, within the context of such broad projections, to establish more detailed changes in occupational patterns that may be of particular importance to individual branches of economic activity. Information of Type C can help to identify structural changes within occupations, the understanding of which may be essential to the practical interpretation of quantitative trends and projections.

In practice, all four types of information are essential to an understanding of the direction of change in the labour market. Such an understanding is of importance, clearly, to those responsible for the central planning and direction of vocational education and training. Even in a decentralised or market-driven system, it is important as a key input to the decisions of individual workers and new entrants to the labour market, of employers and potential investors, and to the managers of both public and private-sector education and training institutions.

¹² Terry Corcoran is Senior Economist with FÁS, the Irish Training and Employment Authority. He acted in a personal capacity in the preparation of this report, and the views and recommendations contained in it are his own.

Availability of such information in Estonia

The provision of Type A information is well developed in Estonia. A detailed review of the main aggregate employment, unemployment and labour force series is contained in Annex B. The decision to carry out Labour Force surveys in 1995 and 1997, and to repeat them at more frequent intervals in the future, has provided a wealth of information on the dynamics of the labour market.

The extent to which ad-hoc surveys (Type B information) have been carried out is inevitably more difficult to pin down. However, in the recent past, such surveys have been carried out both by the Labour Market Board (LMB) and by the European Training Foundation itself.

The Labour Market Board survey covered firms in a range of sectors. The data collected included partial information on the current occupational structure of employment, identification of specific occupations for which companies expected to be recruiting in the future, the main employment/labour issues facing the firm, and the expected use of the services of employment offices.

The Foundation survey was addressed to 300 of the largest firms in Estonia. Again, it collected partial information on the occupational pattern of present and planned employment. It also went into further detail on employers' views on issues such as:

- recruitment practices and channels and the extent to which qualifications played a role as recruitment criteria;
- interaction with vocational schools in relation to initial training (as a source of recruits, in provision of work experience to students, etc.);
- re-training of existing workers and how it should be organised; and
- the development of national systems of qualifications.

In each case, these surveys provide information which will be of use to the respective organisations carrying them out. Indeed, some of the data collected by the Labour Market Board are of potential relevance to the vocational education and training system, and some of the data collected by the Foundation will be of use to the labour market authorities. However, neither survey, for a variety of reasons, produces results which can readily be compared with those of more aggregate enquiries such as the labour force survey. This is principally because they do not take a comprehensive approach to the collection of occupational information. It is difficult to draw conclusions, from such surveys, on the relative supply/demand balance in given occupations across the economy as a whole. It is this type of information which is most useful as an indicator of where priority should be given in terms of vocational training provision and other labour-market interventions.

Softer Type C information is held primarily by those directly involved in the management of human resources within enterprises, and by those within the vocational education and training system (both providers and experts) who have developed good contacts with enterprises. Internationally, these types of contact are often on an *ad-hoc* basis. This process is being put on a more formal footing in Estonia as part of the development of a national system of qualifications. This involves enterprises (through Professional Councils of the Estonian Chamber of Commerce), as well as the Ministries of Social Affairs and Education, in the identification of the core skills and qualifications required in individual occupations. This process, as long as provision is made for regular review, should ensure that vocational training providers are kept informed of changes in the nature of individual jobs.

Finally, information of Type D is readily available. The Ministry of Education has a well-developed system of data collection on all parts of the education system, with the outputs being published by the Statistical Office both in the *Statistical Yearbook* and, in greater detail, in the specialist yearbook of

education statistics. The data provided includes an annual series on the number of graduates from each level of the education system, classified, where relevant, by area of specialisation. The Ministry has also developed a "flow" model which identifies transitions between the different levels of education. In this way, it is possible to establish the *net* outflow of young people completing each successive stage of education and training.

Current use and dissemination of labour market information

It will be clear from the foregoing that there is a wide range of information available on the dynamics of the Estonian labour market. In some, but not all cases the data sources include detail on occupational structure, which is the main focus of this report.

Deficiencies

Two main deficiencies in the current labour market information system can be identified.

First, there is no established focal point with the resources necessary for the assembly and analysis of the available information from an occupational point of view. As a result there is no widely shared and well-understood consensus on the current occupational structure of employment and the forces which have influenced it. To some extent this is due to the fact that the main occupational data from the 1995 Labour Force Survey have only become available in the recent past. The fact that these data are now available, and will be updated at regular intervals, provides an opportunity for studies of change in the occupational structure which could be of benefit to many of the actors in the labour market and the vocational education and training system.

Second, attempts to forecast future trends in occupational demand and supply have been limited to date. A "forward-looking" approach is a feature of some of the ad hoc studies described earlier, and of the work being undertaken in the development of national qualifications. The value of these exercises is reduced, however, by the absence of a broader overview which would provide the context in which they might properly be interpreted. There are two main ways in which such an overview can be developed:

- through systematic studies of the specific manpower and training needs of individual key sectors or branches of activity, which are firmly rooted in a strategic assessment of the current position in, and prospects for, the sector concerned; and
- aggregate-level assessment of the prospects for change in the occupational structure of employment and of labour supply, based on consensus or widely-accepted prognoses for the macro-economy.

Both of these approaches have been used with some success in Ireland. The issue is whether these approaches can be implemented in Estonia when account is taken of its particular circumstances, including *inter alia* data availability, the local availability of the required forms of expertise, and the stage the country has reached in the transition to a market economy. This issue is best examined separately in relation to each of the two approaches.

Sectoral studies

In view of the central place of the sectoral study approach in the terms of reference, a detailed specification for a typical study can be found in Annex C.

Based on information collected during the visit to Estonia, it would appear that there is ready local availability of the necessary resources to carry out all stages of a sectoral study based on the model developed in Ireland. This is certainly true of those stages which involve the collection of statistical data from firms, both in terms of the design of suitable questionnaires (with which the Foundation itself has experience) and in survey administration, where at least one independent research organisation has a track record of enterprise surveys and good contacts with firms.

However, difficulties could arise at the level of developing a strategic overview of sectoral prospects. In the Irish case, this work has normally been carried out by private-sector management consultants specialising in the area of competitive strategy, and such consultancy appears relatively undeveloped in Estonia. However, it should be noted that much of the current international body of competitive strategy literature, and particularly those elements most relevant to the sectoral approach, is an outgrowth of the academic field of industrial economics. There are already a number of researchers working in this field in Estonia, as evidenced by the range of Estonian contributors to a recent publication *Estonian Economy and European Integration*¹³, particularly those parts dealing with sectoral developments.

Aggregate-level assessments

Economy-wide assessments of future occupational developments are carried out in a number of stages. On the demand side, these involve:

- development of employment forecasts by branch of activity based on available macro-economic forecasts;
- developing projections of the occupational structure of employment within each sector;
- combining these two elements to generate projections of aggregate economy-wide employment classified by occupation; and
- development of projections of demand, classified by broad required level of educational attainment and based on the occupational forecasts.

On the supply side:

- using existing data on the educational attainment of the labour force, together with assumptions on attrition due to retirement, withdrawal, death, etc., to estimate the educational composition of the "surviving" labour force at a series of future dates;
- estimating the educational attainment of new entrants to the labour force on the basis of data on outflows from the general education and vocational training systems; and
- combining these to generate projections of the aggregate labour force, classified by educational attainment, for future dates.

Comparison between the employment and labour force projections can indicate whether significant tensions are likely to emerge between the demand for and supply of people with different levels of qualification.

¹³ Edited by B. Berg, and published by the Research Institute of the Finnish Economy, 1997.

On the basis of a review of existing information sources (see Section 2 above and Annex B) it is clear that sufficient data are available to support at least a preliminary exercise along these lines. By comparison with the present Irish approach, certain limitations exist. Principal among these are:

- the larger size of the sample in the Irish labour force survey, together with the availability of census data at 5-year intervals, allows employment to be analysed in terms of 45 occupational categories within each of 29 activity sub-groups. As will be clear from Annex B, the scope for detailed analysis would be more limited in Estonia; and
- a long and reasonably stable time series exists in Ireland on the trends in occupational composition within individual sectors. Historical data on these trends are more problematic in Estonia. Moreover, past trends may be of more limited value as a guide to future developments given the scale of the recent changes in economic organisation in the country. As a result, it may be necessary to explore other bases for projecting within-sector occupational trends. One promising possibility here would be comparisons between the occupational structure of industry branches in Estonia with that in other countries, and forming views on the likely time-path of convergence between them.

Despite these *caveats*, at this stage it would be of value to develop a set of projections which would establish the likely broad occupational implications of the macro-economic projections being developed at present by the Ministry of Finance¹⁴. Estonia is emerging from a period of employment adjustment and decline, and employment is likely to grow in the future. At the same time, the demographic outlook is such that underlying labour-force growth is likely to be slow, and unemployment is already low in some occupations. In these circumstances projections based on even a limited number of sectors and occupational groups are likely to be of assistance in identifying potential tensions in the labour market.

Suggested actions

Sectoral studies

It is recommended that the Estonian authorities should make provision for at least two initial sectoral studies, with a view to extending the scope to additional sectors over time. Given their importance to the country's future economic prospects, it seems desirable that the two initial activity branches to be studied should be food production and the processing of forestry products.

It is recommended that overall responsibility for these studies should be given to the Foundation, operating through the National Observatory, given its position at the interface between the employment system and the vocational training system, and the work it has already carried out in the development of information flows across this interface. In carrying out the work, the Observatory should be supported by advisory groups at two levels:

- an overall steering group for sectoral studies, representative of the bodies which supply the current membership of the National Observatory expert group. The individual representatives need not necessarily be the current expert group members; they should be identified on the basis of their analytical background with a view to making a concrete input to the process. The steering group would advise on the development of the overall programme of studies, and on the implementation of action plans emerging from the studies.

¹⁴ See *Pointers to future trends* below.

- An *ad-hoc* advisory group for each individual study. This should be representative of enterprises in the sector concerned, of sectoral expertise from the relevant ministries (usually education, economics, and social affairs) and development agencies, and of at least one vocational training provider institution which has close links to the sector concerned. The advisory group would have a more detailed involvement in the design and implementation of the sectoral study, and would be expected to contribute, in particular, to the development of the strategic sectoral assessment.

In addition, it is recommended that the Observatory enlist the full-time services of a professional researcher with a background in industrial economics to take responsibility for the administration of the first two sectoral studies. This person would develop the study specification in consultation with the Advisory Group, and, as well as managing the project, carry out those elements of the study which involved desk research. It is recommended that the enterprise survey element, as well as the facilitation of industry workshops/seminars, be carried out by an independent Estonian market research institute chosen through a tender process.

It is envisaged that there would be some time overlap between the first two studies. Based on the time-scale for recent Irish studies, with a commencement date in early 1998 it should be possible to complete the first such study by the end of 1998, and the second by mid-1999.

Aggregate-level assessments

It is recommended that the Observatory develop an overall occupational forecasting model with a view to producing a first set of aggregate forecasts during 1998.

The skills necessary to execute such a project are already present within the Observatory, but its resources are stretched. It would be of benefit therefore, to employ someone with a statistics background, on a contract basis, to be responsible for carrying out this work under the direction of existing Observatory personnel.

The Observatory should also seek to have access to advice from a working party of designated personnel from the Statistical Office and from policy divisions of the Ministries of Education, Economics, Social Affairs and Finance in the development of the forecasts.

External consultancy

Each of the approaches suggested above is designed to draw as far as possible on expertise which is available in Estonia, and to minimise the requirement for external consultancy. However, it would be useful if such external assistance were available for short periods at a number of stages.

In the case of sectoral studies, this would take the form of a number of brief (one-week) inputs from individual consultants experienced in such work:

- at the design stage of the first study;
- at the stage where the strategic assessment is being finalised; and
- during the report-writing stage.

In the case of the aggregate assessment, similar inputs would be useful:

- at the initial stage of the work, in order to familiarise those responsible with the details of available forecasting techniques; and
- at the stage when the projections are being finalised and reviewed.

Official labour market information in Estonia

Information on employment; level, pattern, and past trends

Economy-wide data

The two main potential sources of economy-wide data on employment are the Labour Force Survey and the Enterprises Register. Of the two, for reasons discussed below, the Labour Force Survey is likely to be a useful starting place for any detailed examination of the labour market situation.

A consistent series of annual estimates of aggregate employment from 1989 to 1996 has been developed by the Statistical Office of Estonia. The data for 1989-95 are based on the results of the 1995 Labour Force Survey (a sample survey with 9,600 respondents). This survey, as the first of its kind, collected retrospective data for the years since 1989 in respect of all those in the resident 1995 population aged between 16 and 75. A further survey was carried out in 1997, and the 1996 estimates are drawn from the preliminary results thereof.

In developing the consistent series for years prior to 1995, it was necessary to make adjustments to the raw retrospective data from the Labour Force Survey. The principal reason for this was to allow for the fact that significant numbers of people who had been in the labour force in 1989 had emigrated by 1995, and were not therefore reflected in the sample. Thus, while the Labour Force Survey indicates that employment among the population which was still resident in 1995 had fallen by 11% since 1989, the official consistent series shows a decline of almost 22% in aggregate employment over the same period. The estimate for 1996 shows a further small decline (-1.6%) over the 1995 level.

Sectoral data

The official employment series for 1989-1996 identifies 16 separate branches of economic activity. These are shown in Table 1, together with some data on employment trends since 1989. The data show that the decline in employment over recent years has been accompanied by a transformation of the employment structure. While employment has declined in most of the activities identified, agriculture and fishing, construction, health-care, and manufacturing and mining have been the worst affected. At the same time, there has been an increase in employment in several branches, most notably in finance (from a very small base), but also in distribution, education and public administration. The remaining activities had 1996 employment levels which were broadly unchanged on their 1989 totals.

From the perspective of the present report, the most important features of the data available from the Labour Force Survey are the level of sectoral detail provided, and the degree of confidence which can be attributed to the estimates, particularly for smaller branches of activity. Sectoral detail matters because within apparently homogeneous sectors such as manufacturing, individual activities (e.g. food production and engineering, respectively) can have very different patterns of labour demand, and overall growth in manufacturing can mask major shifts between these activities.

The issues of detail and confidence are related to size of the population sample covered by the survey. As already noted, this was less than 10,000 in the case of the 1995 survey, representing one respondent for every 115 people in the target age group of 15-74¹⁵.

¹⁵ For comparison, the 1997 Irish Labour Force Survey covered 148,000 respondents, one for every 25 of the target population.

**Table 1: Activity branches identified in official employment series,
with trend data for 1989-96**

Branch of activity	Employment ('000)		Change (%)	Employment share (%)	
	1989	1996		1989	1996
Agriculture, forestry	150.8	59.7	-60%	18.0%	9.2%
Fishing	26.5	5.0	-81%	3.2%	0.8%
Mining and quarrying	12.3	8.9	-28%	1.5%	1.4%
Manufacturing	214.9	154.4	-28%	25.6%	23.9%
Utilities	18.6	16.4	-12%	2.2%	2.5%
Construction	64.9	36.8	-43%	7.7%	5.7%
Distribution	61.6	85.8	39%	7.4%	13.3%
Hotels and catering	18.8	17.8	-5%	2.2%	2.8%
Transport, communications and storage	65.6	64.7	-1%	7.8%	10.0%
Finance	3.9	6.6	69%	0.5%	1.0%
Business services	33.6	32.3	-4%	4.0%	5.0%
Public administration and defence	32.8	35.0	7%	3.9%	5.4%
Education	51.0	56.3	10%	6.1%	8.7%
Health and social care	50.5	35.9	-29%	6.0%	5.6%
Personal and community services	30.2	28.8	-5%	3.6%	4.5%
Total	837.9	645.6	-23%	100.0%	100.0%

Source: Estimates for 1989 are from Statistical Yearbook 1997. Estimates for 1996 supplied by Ministry of Finance, based on preliminary results of 1997 Labour Force Survey.

This means that some of the smaller estimates in Table 1 (for example those for activities such as finance and fishing) are based on very small numbers of respondents. Changes from one year to the next in the data for these activities should be treated with a fair degree of caution.

At the same time, there is probably some scope for presenting more detail in the published Labour Force Survey data for manufacturing, which, while accounting for nearly one quarter of all employment, is shown only in aggregate. The survey question on sector of activity is coded in a way which would allow more detailed analysis of employment by activity within manufacturing.

Finally, limited employment data are available from the Enterprises Register, which is maintained under the administration of the Ministry of Finance. In principle, this source should allow analysis of employment trends by sector in great detail. However, as in other countries, there have been problems in keeping the register up to date, problems which have been exacerbated, in the Estonian case, by the very rapid pace of structural change at the enterprise level. This limits the potential of the register as a source of data on past trends in employment. A major "cleaning" operation on the register is now underway, and once this is complete, it may become more useful as a source of data on short-term trends.

Extent of occupational detail in these sources

Detailed information on the respondents' occupations is collected in the Labour Force Survey. Within the limits created by the size of the sample, this makes it possible to analyse the occupational pattern of employment in the economy overall and in individual sectors. The relevant data for 1995 are given in Table 2.

Table 2: Employment by occupation within branches of activity, spring 1995

	Total	Managers	Professional	Associate prof.	Clerical	Service/sales	Semiskilled manual	Skilled manual	Labourers/other
Agriculture, forestry	100.0%	8.2%	3.9%	5.8%	2.6%	1.6%	51.8%	20.6%	5.6%
Fishing	100.0%	8.0%	3.0%	12.0%	2.0%	2.0%	43.0%	27.0%	3.0%
Mining and quarrying	100.0%	11.2%	3.4%	0.0%	6.7%	1.1%	40.5%	31.5%	5.6%
Manufacturing	100.0%	11.9%	6.6%	5.7%	5.7%	0.8%	42.7%	16.4%	10.2%
Utilities	100.0%	9.9%	13.5%	10.5%	3.5%	0.0%	32.7%	25.7%	4.1%
Construction	100.0%	16.4%	2.9%	4.9%	2.5%	0.7%	52.5%	14.2%	5.9%
Distribution	100.0%	21.2%	3.5%	14.5%	6.9%	30.6%	9.0%	4.4%	10.0%
Hotels and catering	100.0%	10.3%	0.0%	6.4%	5.1%	51.9%	7.7%	1.9%	16.7%
Transport, communications and storage	100.0%	10.7%	3.8%	7.4%	13.5%	4.8%	14.9%	39.1%	5.9%
Finance	100.0%	16.9%	19.7%	22.5%	32.4%	2.8%	2.8%	2.8%	0.0%
Business services	100.0%	18.7%	23.6%	15.9%	3.3%	7.3%	12.2%	6.1%	13.0%
Public administration and defence	100.0%	16.6%	14.7%	29.0%	6.1%	13.7%	1.9%	4.1%	14.0%
Education	100.0%	6.5%	57.4%	10.0%	2.3%	7.4%	4.7%	1.6%	10.0%
Health and social care	100.0%	4.6%	22.0%	27.8%	5.1%	27.3%	3.2%	2.2%	7.8%
Personal and community services	100.0%	15.7%	29.1%	15.2%	4.4%	10.9%	5.7%	5.2%	13.9%
Total	100.0%	12.7%	12.4%	11.4%	5.7%	10.5%	24.9%	13.4%	9.0%

Source: Labour Force Survey 1995, Volume 2, Table 14, page 86.

The table illustrates clearly the very different occupational profile of employment in different sectors of the economy. Contrast, for example, the manufacturing sector, where less than 20% of jobs are at managerial or professional level, with the finance and business services sectors, where about 40% of employment is in these occupations. These types of differences across activity branches suggest that further change in the sectoral structure of Estonian employment are likely to have a significant impact on the occupational pattern of labour demand.

There are no published data on past trends in the occupational structure of employment at this level of detail (although there is a brief commentary on occupational change in the transition period in Volume 2 of the 1995 Labour Force Survey). Use of the retrospective data in the 1995 Labour Force Survey for past trend analysis would be limited in any case. It is unlikely that those who had been working in 1989, but had emigrated by 1995, had the same occupational distribution as did the workforce overall. Their absence from the 1995 sample thus poses real problems for the

interpretation of the retrospective data on occupations. In addition, the confidence restrictions imposed by the small sample size become even greater in the analysis of year-to-year changes than in the analysis of the occupational structure for any given year.

Finally, although it is not published in the Labour Force Survey itself, information was collected on the educational background of respondents. The information is coded in a way which is meaningful in terms of the current structure of education. It could be used as a basis for analysing the educational background of those employed in various occupations. Such an analysis would help in identifying the nature and importance of existing linkages between education and the labour market.

No occupational data are available from the Enterprises Register.

Information on labour supply

Labour force

Aggregate labour supply

Trends in the size of the labour force are determined by developments in the size of the working-age population together with changes in the level of labour force participation. Again, consistent time series for these aggregates are available in Estonia, and the main recent trends are given in Table 3.

Table 3: Working-age population and labour-force participation

	1989	1990	1991	1992	1993	1994	1995	1996
Population aged 15-69 ('000)								
Male	519.6	522.7	523.7	522.8	512.5	507.8	504.4	500.9
Female	576.8	579.6	580.3	578.4	567.4	561.6	557.2	553.2
Total	1096.4	1102.3	1104.0	1101.2	1079.9	1069.4	1061.6	1054.1
Participation rate								
Male	82.6%	82.1%	81.6%	80.5%	78.0%	77.9%	75.9%	75.0%
Female	71.7%	69.4%	67.6%	64.7%	63.1%	63.0%	61.7%	61.8%
Total	76.9%	75.5%	74.3%	72.2%	70.2%	70.1%	68.5%	68.1%
Labour Force ('000)								
Male	429.1	429.3	427.5	420.7	399.9	395.5	382.9	375.8
Female	413.5	402.4	392.3	374.1	357.9	353.9	344.0	341.8
Total	842.6	831.7	819.8	794.8	757.8	749.4	726.9	717.6

Source: Estonian Statistics Monthly, No. 10(70), p.28

The transition period has seen a moderate drop in the size of the working-age population and a sharp fall in labour-force participation. Combined, these have led to a fall of some 15% in the numbers in the labour force between 1989 and 1996. The decline in the female labour force has been slightly greater than that for males (17% as against 12%). As the population trends for men and women are broadly similar, this can be put down to a rather faster decline in the participation rate among women.

Despite the decline in labour force participation, the aggregate participation rate in 1995 remained somewhat above that for the European Union countries overall, and on a par with that of the northern EU member states such as Denmark and Germany.

Age, occupation, educational qualifications

Data on changes in the age-structure of the labour force in recent years are given in Table 4. They indicate that the major decline in participation has been in the older age groups, particularly among those aged 55 years and over. There has been a less significant decline in participation in the 35-44 age-group. This has led to an increase in the proportion of the labour force made up of people in this age-group, from 24% in 1989 to 27% in 1996. There has also been a slight increase in the share of the youngest age group (aged 15-24) in the labour force.

Table 4: Labour force by age group

Age Group	1989			1995		
	('000)	Labour force share	Participation rate	('000)	Labour force share	Participation rate
15-24	109	13%	50%	102	14%	48%
25-34	218	26%	91%	180	25%	86%
35-44	201	24%	96%	198	27%	92%
45-54	184	22%	95%	156	21%	88%
55-69	131	16%	55%	91	13%	37%
Total 15-69	843	100%	77%	727	100%	69%

Source: Derived from Tables on pages 172-174 of Statistical Yearbook 1997

As data on prior occupations are collected on the unemployed in the Labour Force Survey, it is possible to provide an occupational breakdown of the overall labour force for 1995 as shown in Table 5. (Retrospective data are not given, for the reasons discussed earlier in relation to Table 2).

Table 5: Labour force by occupation, 1995

	('000)	(%)
Managers	87.5	12%
Professional	84.8	12%
Associate professional	81.7	11%
Clerical	40.3	6%
Service/sales	78.3	11%
Skilled manual	185.7	26%
Semi-skilled manual	99.2	14%
Labourers/other	69.0	9%
Total	726.5	100%

Source: Derived from Table 2 above and from the 1995 Labour Force Survey, Volume 2, Table 33. In the case of the unemployed for whom no previous occupation has been reported, it has been assumed that the reason for this is because they have not previously worked, and that they have the same occupational profile as those for whom an occupation is reported.

At first sight the occupational distribution of labour supply seems to follow that of labour demand (compare Tables 2 and 5). However, closer examination of the two distributions shows up some important differences. These are discussed in the next section.

Finally, as in the case of those in employment, the Labour force Survey data set could be used to examine the education-background structure of the overall labour force.

The balance in the labour market

The unemployment rate compares the number of unemployed with the numbers in the overall labour force (employed plus unemployed). It is the most commonly used measure of the balance between labour supply and demand, both for the economy overall and for different groups within the labour force.

Labour Force Survey-based estimates

At the aggregate level, the consistent series in the Statistical Yearbook indicates that the unemployment rate in Estonia rose from less than 1% in 1989 to 8.7% in the first quarter of 1995. Preliminary estimates from the 1997 Labour Force Survey suggest that the average rate over the whole year was 9.7% in 1995, rising to 10.0% in 1996, and falling to about 9.5% in 1997.

Of more relevance to the present paper is the rate of unemployment in various occupation groups. As already mentioned, the occupational structure of labour demand and labour supply are broadly similar. However, the differences are sufficient to create a wide variation in unemployment rates across occupations, as shown in Table 6.

Table 6: Unemployment rates in different occupations, 1995

	Employed		Unemployed		Labour Force		Unemployment rate
	('000)	(%)	('000)	(%)	('000)	(%)	(%)
Managers	84.1	12.7%	3.4	5.3%	87.5	12.0%	3.9%
Professional	82.1	12.4%	2.7	4.3%	84.8	11.7%	3.2%
Associate prof.	75.5	11.4%	6.2	9.8%	81.7	11.2%	7.6%
Clerical	37.9	5.7%	2.4	3.8%	40.3	5.5%	6.0%
Service/sales	69.8	10.5%	8.6	13.5%	78.3	10.8%	10.9%
Skilled manual	165.3	24.9%	20.3	32.0%	185.7	25.6%	11.0%
Semi-skilled manual	88.8	13.4%	10.4	16.4%	99.2	13.7%	10.5%
Labourers/other	59.5	9.0%	9.5	14.9%	69.0	9.5%	13.7%
Total	663.0	100.0%	63.5	100.0%	726.5	100.0%	8.7%

Source: As for Table 5 above.

Unemployment rates for white-collar workers are below the average for all occupations, with particularly low levels of unemployment among managers and professional workers. Unemployment is above average among blue-collar workers (including those in routine sales/service occupations), with the highest rates being found among those in labouring and other elementary occupations.

While the data are unpublished, the Labour Force Survey provides the basis for analysing rates of unemployment classified by level of prior educational attainment.

Employment-office data

Regular and timely data are available on unemployment from the Labour Market Board, based on registrations with employment offices. These data can be analysed in detail by age, gender, and previous occupation. However, the registered unemployed represent only slightly over half of those identified as unemployed in the Survey. While the registration data provide essential management information (for example in the planning of short-term training provision for the unemployed), the Labour Force Survey database has more potential for analysis in terms of the overall balance in the labour market.

Pointers to future trends

The Ministry of Finance is in the process of finalising economic projections for the period up to the year 2002. These will contain both a "base" and a "target" forecast for anticipated employment developments, corresponding to similarly differentiated economic forecasts.

At the current stage of drafting, each of the alternative projections envisages some recovery in employment from 1997 onwards, partially reversing the steep decline which has occurred during the transition period. The recovery is slightly more rapid in the "target" projection.

While the size of the working-age population is expected to go on declining, both projections foresee a reversal in the recent fall in labour force participation, with the rate for those aged 16-69 rising from about 68% in 1997 to between 71% and 72% in 2002. As a result, the size of the labour force is projected to increase by about 6,000 *per annum*. In this context, the base employment projection would see the unemployment rate rising further, to about 11% in 2002, with the target projection implying a fall in the unemployment rate to about 8%.

The Ministry's employment projections are broken down by main branch of activity. They do not, however, identify projected trends in the occupational composition of employment.

Sectoral studies

Overview of scope and purpose

In general, the aim of a sectoral study is to set out the probable or desirable future development of specific industry sectors in the context of economic, social and other developments over a 5-year time-scale, and recommend the manpower and training interventions required to support this development.

Thus, one of their prime purposes is to help the various stakeholders make good decisions about manpower and training activities relevant to the sector. These stakeholders include the bodies representing enterprises, vocational training providers, government ministries, union representatives and individual companies themselves.

Specifically, one of the purposes of a sectoral study is to identify and prioritise key skill areas for which vocational education and training interventions are required. A sectoral study would also provide feedback on the quality of provision of education and training for the sector and hence allow education/training providers to modify their programmes. It would also provide indications of the numbers of persons likely to be recruited by the sector and hence the need for initial education/training provision. Another purpose is to indicate to individual enterprises the types of change required for success, and hence assist them in identifying their own training needs and plans. The funding of training programmes for the unemployed would also be influenced by a sectoral study as it would identify the broad numbers and types of courses needed for a particular sector.

Main features of a manpower and training needs sectoral study

The study should begin with a definition of the sector and its constituent sub-sectors and go on to set out the present position of the industry in terms of markets, enterprises, technology, labour, business performance and other factors relevant to the sector in question. It should identify and assess market opportunities and threats using a 'SWOT' analysis. It should spell out the technological, legislative, trading and other changes likely to affect the industry. Changes due both to the global market and to changing international trade arrangements should be identified and their importance assessed. The present position of enterprises in the sector vis-à-vis foreign competition should be analysed and benchmarked.

The study should then set out the kind of market, business, technological and manpower position that will be required for success in the industry in the future. It may be useful at this stage to set out a number of scenarios based on different assumptions and explore their consequences and, in particular, the measures needed to achieve the most favourable one. The changes that enterprises in the industry, and related industries, need to make to achieve this positive outcome can then be presented and, in particular, the manpower, skills and training changes that are required. Conclusions on manpower and training should clearly follow from the analysis of markets, technology etc. It should be emphasised that this strategic analysis should be fully linked to that of government and other development organisations and should build on their work as much as possible with resulting benefits to all.

Finally, the study should go on to indicate in detail the manpower and training actions needed in a number of areas to achieve the strategy set out for the industry. These areas are set out in more detail in the 'Study Report' section below. The study should also develop a methodology for up-dating its results on a regular basis.

Typically, a study would have a 5-year time horizon but would also address key issues that will affect the sector over a longer time scale.

Methodology

The precise methodology to be used will need to take into account any special factors or priorities in relation to a sector, including the types of information already available about a sector. However, it is also important that a broad, standard, methodology is established which can be adapted in particular cases. The main activities involved in a study would be expected to be in the following four broad phases:

Information gathering

- gathering of business and manpower information and statistics for the sector, including comprehensive statistics on existing employment in the sector (and sub-sectors) for main occupations;
- surveying enterprises in the sector to find out their current situation, plans for the future, difficulties and suggestions for improvement in a range of areas including markets, technology, work organisation, manpower and training;
- obtaining information about relevant legislation;
- obtaining information about other relevant changes (e.g. GATT, tariffs, EU accession);
- obtaining information on developments in other sectors which might affect the sector under review;
- analysing existing reports about the sector both in Estonia and overseas, and comparing the performance of the sector with international competitors;
- discussing the development of the sector with relevant government ministries and development agencies, and obtaining information about their strategies and policies for the sector;
- obtaining the views and proposals of other stakeholders in the industry including employer and union representatives;
- obtaining information about technological developments (at home and internationally); and
- gathering information about existing education and training provision which is of specific relevance to the sector, and its adequacy.

The information gathering phase would be conducted through a combination of desk research, a survey of companies in the sector, in-depth discussions with stakeholders and industry seminars. The establishment of comprehensive industry statistics should draw as far as possible on existing sources. This is necessary to reduce costs in the enterprise survey stage, which should concentrate on the collection of the minimum possible amount of essential information which is not available from other sources.

Analysis

- establishing a company database for the sector;
- analysing likely developments in the sector internationally and Estonia's position vis-à-vis them;
- identifying the key factors that will determine whether or not Estonian enterprises will be competitive in the future based on a SWOT-type analysis;
- analysing the desirable future direction for the industry, taking account of industrial and other Government strategies, and the industry's own performance capacity;

- calculating the manpower and skill implications of developments in the key affecting the sector;
- calculating the number of employees by main occupations likely to be employed in the sector in the future;
- calculating the number of new entrants that will be required by the sector to satisfy both expansion and replacement needs;
- estimating the amount and type of training required by new entrants; and
- calculating the number of existing employees requiring training and the kind of training required.

The analysis phase would include the compilation and assessment of the data gathered in the first phase of the study. It would include compiling and analysing the results of the survey of the industry. It would involve the application of high-level interpretative and synthesising skills.

The study report¹⁶

The study report should present a general analysis of the sector based on the information and analysis outlined above. This should include the present situation of the sector, the factors leading to change in the future, and a proposed response from government agencies, particularly the vocational training sector and the training arm of the Ministry for Social Affairs, and by the sector itself to these future changes. The manpower and training recommendations should emerge clearly from the analysis of developments affecting the sector. In addition, the study report should:

- provide broad indications of the number of employees requiring training and re-training, indicating the type and duration of training required over the 5-year period;
- provide broad indications of the number of new recruits needed annually in the sector over the 5-year period, indicating the types of employees and skills required. (Particular attention in this should be paid to occupations requiring a formal skill training programme of extended duration for which forward-planning is required if shortages/surpluses are to be avoided);
- prioritise the training needs of the industry so as to guide the allocation of national and sectoral training funds;
- indicate the kinds of changes that enterprises should make in the future to be successful¹⁷;
- indicate special initiatives that may be needed to promote or develop training and human resources development (HRD) in the sector;
- indicate the types of action required by other government ministries and agencies to achieve the outcomes recommended in the report; and
- provide a clear basis for up-dating the manpower and training results of the study.

16 The key components of the study report are set out in summarised form in Table 7 at the end of this Annex.

17 As well as being of value to enterprises themselves, this information could also be used by public bodies in any promotion-of-change efforts.

Implementation

Following the completion of a sectoral study it is essential that the bodies principally involved, primarily the Ministries of Education and of Social Affairs, in conjunction with other stakeholders, draw up a clear action plan to implement the recommendations. This action plan should include activities, responsibilities, resources and time-scale in relation to each recommendation. The report and action plan should be publicised and efforts made to seek commitments to its recommendations from all parties.

A review process after 2/3 years should be built in to assess the success of implementation and to up-date the study to take account of new circumstances.

Comment: The need for flexibility

It is important to emphasise that sectoral studies should remain flexible in order to maximise their relevance to different industry sectors. They should all be based on a forward-looking, industry-based, strategic development approach to identifying human resources development needs. They should all provide advice across the range of human resources development issues. However, in some cases, the emphasis may be on a quantified, numbers, approach to identifying training needs, while in others training quality and skill changes may be more important. Some may emphasise developments and human resources development responses within firms, others the actions required of external organisations. The nature of the industry itself, and the adequacy of the existing human resources development infrastructure for the sector, would be among the factors which would affect the balance of any sectoral study.

Time-frame and resources required

The elapsed time and the resource inputs required for sectoral studies have varied greatly in Ireland. Both have been reduced over time as a result of a movement away from basing industry forecasts on detailed projection of past statistical trends towards an increased emphasis on strategic assessment of the prospects for the sector. While, as mentioned above, the latter has required the input of high level interpretative and synthesising skills, it has led to substantial reductions in costs at the information-gathering stage.

A reasonable estimate of resource and time inputs can be based on those proposed for the latest Irish study (of the software development sector) which is now underway. The study is expected to absorb approximately 12 man-months of research time (including data collection resources), and to take approximately 9 months to complete.

Table 7: Key components of a manpower and training needs sectoral study

Definition and statement of current situation in the sector	<ul style="list-style-type: none"> ■ Industry and Firm Size and Composition ■ Markets ■ Technology ■ Business performance and competitiveness ■ Manpower and training ■ Strengths and Weaknesses
Change Factors for the Future	<ul style="list-style-type: none"> ■ Global competition, tariffs, trade regulations ■ Technological changes ■ Legislative changes ■ Labour market changes and problems ■ Threats and opportunities
Proposed Future Strategic Direction for the Industry	<ul style="list-style-type: none"> ■ Markets, domestic and export ■ Industry composition ■ Technology ■ Work organisation ■ Other changes
Employment, Manpower and Training Requirements	<ul style="list-style-type: none"> ■ Numbers and types of employment in future ■ Training and education requirements (quantities and types) ■ Company human resources development actions required ■ Other labour market issues to be addressed
Recommendations	<ul style="list-style-type: none"> ■ Vocational training providers' and funders' actions ■ Company actions (in a range of respects including human resources development) ■ Other government ministries' and development agencies' actions ■ Other labour market actions recommended

Annex 2 (part II): Labour market analysis in Lithuania

Candy Murphy¹⁸

1. *Vocational education and training reform in Lithuania, Background*

Vocational education and training reform is the responsibility of the Ministry of Education and Science in Lithuania. As part of a move towards decentralisation following independence, responsibility for programme development was transferred to individual schools. In 1994 significant resources were allocated to a co-ordinated reorganisation of the vocational education and training system, supported by the Phare programme for vocational training reform which started in 1995. In 1995 the Lithuanian Vocational Training Council was also set up, in 1996 the Methodological Centre for Vocational Training was established, and in 1997 the Centre of Vocational Education and Training Studies was set up in the Vytautas Magnus University to train trainers and carry out research on the vocational training system. Twenty state labour market training centres have also been established. Alongside these there are over 100 private training centres. Such training is co-ordinated by the Labour Market Training Authority. No arrangements have been made as yet for the development of formal training systems for people already at work.

The Labour Market Training Centres are also available for training of employees, on a full cost basis. Such training at present does not lead to a formal qualification because the education system does not currently recognise a modular based approach.

2. *Development of vocational education and training standards*

Vocational education and training standards are being developed under the guidance of the Methodological Centre. They are drafted by teachers and social partner representatives from the 14 Industry Lead Bodies, who are invited to participate as experts. These lead bodies identify priority occupations. To date standards for two occupations have been developed and approved in nursing and book-keeping. The aim is to develop 25 secondary level and 25 post secondary level standards. However, insufficient funding is available to carry out this range of work.

The standards are being developed using the following approach:

- a) analysis of the situation by vocational training experts and social partner representatives;
- b) interviews and surveys in enterprises using questionnaires designed by experts;

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- c) linking of work activities and related knowledge;
- d) development of the standard;
- e) agreement on the standard;
- f) request to schools to adopt the new standard; and
- g) training of trainers to teach the new standard.

It is recognised that there is a lack of formal skills and expertise in developing these standards. Much depends on the competence of the individual teachers involved. It is also recognised that the standards are not based on, or guided by, any labour market research.

However, increasing focus is now being placed on the development of quality assurance systems to improve the validity, relevance and quality of the work being done. Through this system schools will be visited and encouraged to implement their own self-assessment systems and to become 'learning organisations'.

The Labour Market Training Authority is also developing standards. These are called occupational standards. So far thirty modular programmes have been developed. These are to be applied in the new training centres and cover occupations such as that of construction worker. These standards are approved by the relevant Chamber or other competent body. National qualifications are not currently being developed to give formal recognition to these standards. (They are seen to be labour market relevant, rather than educational, standards).

A number of pilot experiments are currently being implemented involving co-operation of the labour market and vocational training authorities in the development of standards that will encompass occupational and vocational education and training standards.

3. Labour market research

The Labour Market Training Authority has also carried out research on labour market demand and employer needs. This has shown that employers want a more flexible, modular-based approach to skill development that is clearly adapted to the needs of the labour market and which includes opportunities for both the progression and the formal recognition of the skill developed. The research has also identified the importance of management development for employers, especially in SMEs.

The Institute of Labour and Social Research is also carrying out research on issues relating to the development of the vocational education and training system, including a strong labour market orientation. The Labour Exchanges provide information on labour market changes, labour market supply and the demand for specific occupations. They also prepare detailed job descriptions based on information obtained from local employers.

4. The Phare vocational training reform programme

The work of the Phare vocational training reform programme has involved the identification of nine job families covering different sectors of the economy. For each job family a number of institutions have been selected to assist in the development of the relevant curricula. Each job family has a co-ordinator to assist in the work. New curricula have been developed for each of the job families,

using a modular and progressive approach. Seven hundred and fifty modules have now been developed and are currently beginning the process of implementation in schools. A period of evaluation and review of these modules is now underway. This work has been a process of learning by doing. Already a number of key learning points are emerging, for example, the need for greater involvement of social partners in the process and the need to overcome resistance to a modular approach in the schools.

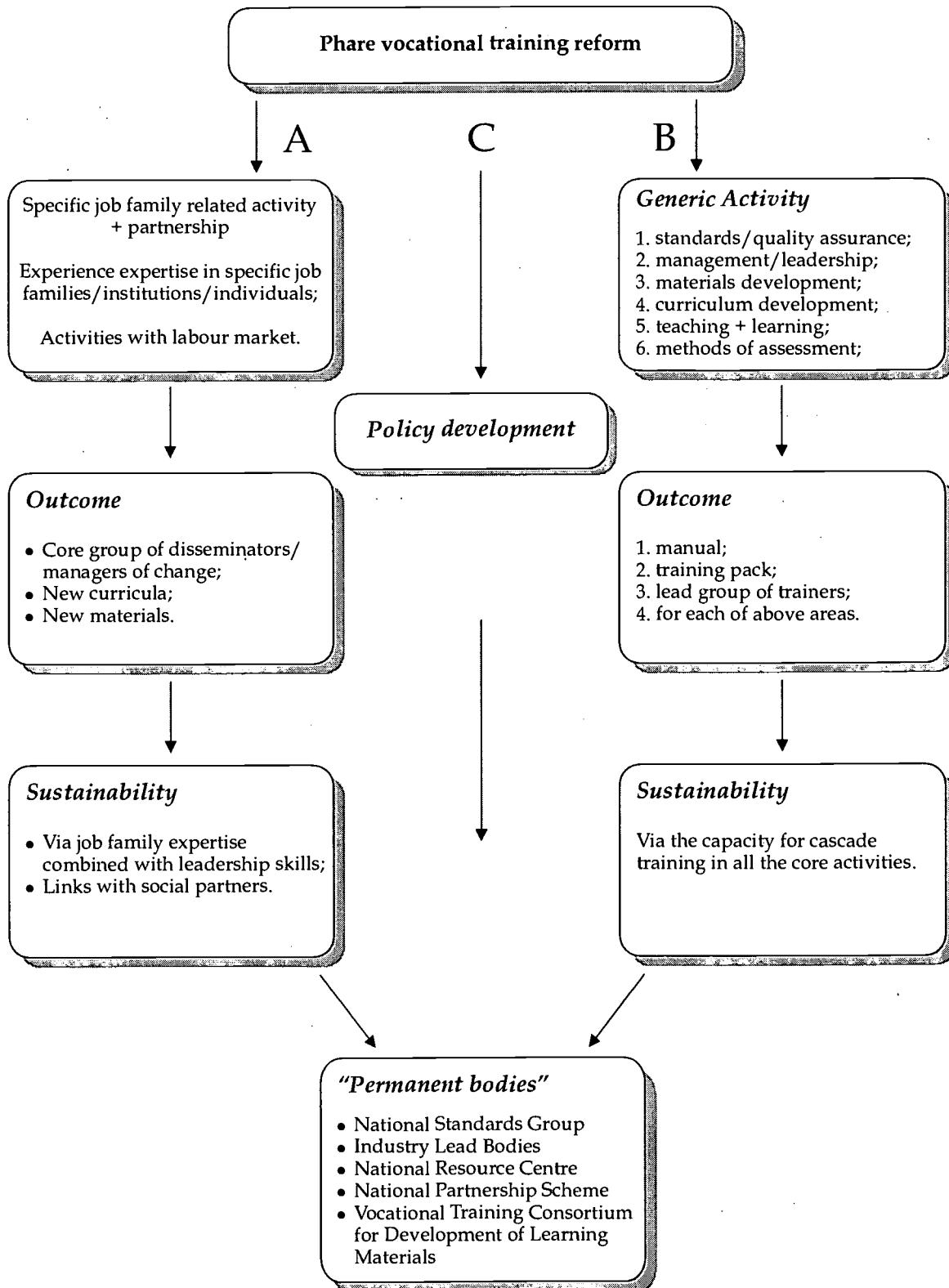
A National Resource Centre has now been set up as 'the principal heir' of the Phare vocational education and training reform programme. This centre has three functions, to act as a learning centre, a development centre and a dissemination centre.

The proposed Model of Sustainability of the Phare vocational training reform programme is shown in Figure 1.

The main difficulties that have been identified so far by the Phare team are:

- the time and resources required to develop the vocational education and training standards and the need to finalise the system and evaluate its quality;
- the need to upgrade trainers and teachers;
- the need to develop a continuing training system;
- the need to extend the role of the social partners in the development of the new vocational training system (membership of a Chamber is not compulsory in Lithuania and therefore Chambers are relatively weak and under resourced);
- the need to improve the level and quality of labour market information available as a guide to the development of relevant standards, curricula and qualifications.

Figure 1. Model of sustainability of the Phare vocational training reform programme



* Source: Lithuanian Phare vocational training reform programme

5. Vocational training reform issues

The main vocational training reform issues are:

- 1) Considerable effort has gone into developing effective mechanisms for reforming the vocational education and training system. However, there is now a recognition of the need for national expertise to be developed for this area, and to provide support and advice to the groups that have been assigned the task of developing the new vocational education and training standards.
- 2) For historical reasons Lithuania has adopted a very decentralised system for reforming vocational training. This is wasteful of resources and slows down the reform process. A national framework for vocational training reform should be agreed to cover new national vocational education and training standards, related curricula and qualifications. The system should allow for some local variation only if required to meet local and regional labour market needs.
- 3) The education and labour market authorities are not co-ordinating their activities in the reform process. As a result the education system is developing vocational education and training standards that are 'input based' for use in the education system while the labour market system is developing occupational standards for use in labour market training systems that are outcome based. This work needs to be co-ordinated at a senior level and both routes should lead to the acquisition of nationally recognised qualifications.
- 4) To date only one in-depth vocational education and training standard has been approved for nursing. There is a need to review the approach used here and to identify ways of speeding up the development process.
- 5) Given the resources required to undertake this work there is a need to identify key change occupations and prioritise these when identifying occupations for which vocational education and training standards should be developed.
- 6) While a range of consultative mechanisms have been established and appear to be functioning these have not, to date, been complemented by adequate professional research mechanisms and expertise. Resources should be allocated to developing national labour market research expertise to link in with and guide the vocational training reform process.

6. Priorities for the future

The priorities for the future should be:

- 1) Development of an effective co-ordination mechanism, backed up by adequate resources, to bring together the work of the Methodological Centre in developing vocational education and training standards and the Labour Market Training Authority in developing occupational standards. This should build on the pilot work currently being done for a small number of occupations and the work that has been done under the Phare vocational training reform programme.
- 2) Agreement on a national framework for vocational training reform including the development of nationally recognised standards and related curricula and qualifications. The qualifications should be accessible to those in the initial training system, the unemployed and those already at work. Regional local variations should only be accommodated if required by employers. This can best be done through the adoption of a modular approach.

- 3) Development of national labour market research expertise to complement the consultation mechanisms and training expertise currently being supported by the two relevant ministries. Such research experts should be assigned to carry out research on current and future labour market needs for each sector. The findings of this research should feed into the vocational training system and guide the prioritisation of occupations and the development of vocational education and training standards, curricula and qualifications for these occupations.
- 4) Increase the involvement of social partners in the above process. This may require, initially at least, some level of state support for Chambers and other relevant social partner bodies.
- 5) The work currently being carried out on developing quality assurance systems should be adequately resourced and funded. Linked to this, formal evaluations should be undertaken of the standards that are now being implemented.
- 6) Management development is a core element of business growth. Both educational and labour market systems should give this area priority.
- 7) National co-ordination mechanisms should be repeated at the local regional level, involving consultation and co-operation between local schools and training centres and local employers.

7. A proposed action plan

Based on the review and discussions as outline above, the following action plan was agreed with the Phare vocational training reform programme office:

- 1) Review the role of the National Vocational Education and Training Council to ensure the proper co-ordination of vocational training services at senior level, to agree national vocational training priorities, and to clarify the roles, responsibilities, resources and training required by the different actors involved (the Ministries of Labour & Education and their related agencies). (Responsibility should lie with the Chair of Vocational Education and Training Council and relevant ministries) Mid-1999.
- 2) Select sectors for sectoral studies and obtain the necessary funding (Vocational Education and Training Council) Mid-1999.
- 3) Set up an expert working group with adequate resources on occupational and vocational education and training standards, to include the Ministries of Labour and Education, with the objective of co-ordinating work programmes, agreeing methodologies, discussing problems, and agreeing definitions and terms (Vocational Education and Training Council and Phare vocational training reform programme) Mid-1999.
- 4) Carry out research to validate selected new curricula, occupational and vocational education and training standards with employers, education and training providers etc. (Methodological Centre) end 1999.
- 5) Set up a steering group for the agreed sectoral studies to draw up terms of reference, select consultants and oversee the research. (Phare vocational training reform programme and foreign expert) Mid-1999.
- 6) Develop a national framework for certification and assessment (Phare vocational training reform programme) Mid-1999.

- 7) Develop agreed external and internal quality assurance systems for all curricula, standards and certification and assessment programmes (Phare vocational training reform programme) Mid-1999.
- 8) Provide adequate training for all those involved in the development of the Lithuanian vocational training system with the aim of developing a high quality, best practice system and nationally-based expertise to meet the highest international standards (Phare vocational training reform programme) 1999-2000.
- 9) Hold seminars and workshops for vocational training experts (national and international), to monitor progress, advise on priorities, discuss problem areas etc. (Phare vocational training reform programme) 1999-2000.

Annex 3 (part II): Labour market analysis in Slovenia

Candy Murphy¹⁹

1. *Introduction and background*

Slovenia is a country of 2 million people with a relatively dispersed population. The country has gone through a period of adjustment since independence. Demographically it is experiencing a decline in its birth rate. In relation to the labour market, significant numbers are leaving school without qualifications, there is high labour turnover, particularly in traditional industry, with a resulting growth in unemployment. Self-employment and service employment are increasing. Skill shortages are being experienced in construction and crafts, as well as in a range of professions including engineers, economists, and languages and mathematics teachers.

In 1995 a White Paper on Education was published which laid the basis for all current vocational training work being carried out in Slovenia. A Centre for Vocational Education was set up to support and facilitate the necessary reforms. The principles of such reform were:

- vocational training should be better adapted to meet the needs of the labour market and changes in the world of work;
- there should be closer links between schools and enterprise; and
- new regional training centres need to be developed.

This report presents the findings of the study visit under the following headings:

- 1) Focus of current work on training needs analysis;
- 2) Mechanisms and institutions involved;
- 3) Issues arising in discussions; and
- 4) Action plan for the future.

2. *Focus of current work on training needs analysis*

The current focus of activity in relation to training needs analysis in Slovenia is on the setting of vocational education and training standards. Under Slovenian law the Chambers of Commerce and Industry are responsible for developing such standards. Chambers are active in the services as well as in the manufacturing sector e.g. the Social Chamber of Slovenia covers the area of social welfare. The Phare office in Slovenia has identified a number of weaknesses in the current approach:

¹⁹ Goodbody Economic Consultants

- the methodology is 'too simple';
- the work is not based on strategies for individual sectors; and
- methodologies for labour market analysis and sectoral analysis are poorly developed.

3. *Mechanisms and institutions involved*

In 1996 agreement was reached on a standard classification of occupations. An expert group, appointed by the Minister of Labour, Family and Social Affairs, prepared the methodology and procedures for the development of vocational education and training standards for these occupations. These standards include:

- the occupational code;
- the occupational title;
- typical tasks performed;
- proficiency level;
- professional knowledge and skills
- title of education; and
- level of education.

The Chambers were given responsibility for the development of vocational education and training standards to be approved by the Ministry for Labour, Family and Social Affairs. These standards were then to form the basis of curricula to be developed by the vocational schools or by the Centre for Vocational Education and Training. The Chambers are also responsible for preparing examinations for these occupations.

The Chambers appointed members to expert groups for the development of the required standards for each sector. These groups also included trade unions. However, the involvement of the unions to date has been very limited. The Centre for Vocational Education and Training is responsible for co-ordinating the work of these groups.

Currently more than 100 standards have been developed. These are now to form the basis for restructuring the vocational training curricula. (Over 500 Chamber members have been involved in this work).

The approach used is illustrated in Table 1. Two examples of work in this area are also shown in Tables 2 (prepared by the Social Chamber of Slovenia) and 3 (prepared by the Centre for Vocational Education and Training).

The Statistical Office also carried out a survey of employers in order to identify the typical work activities of a group of occupations and to rank the complexity of the work activities involved and thus to rank the occupations (Table 4).

4. Issues arising

The study visit indicated the following:

- a) much progress has been achieved in involving the social partners in developing vocational education and training standards and thus increasing their role and involvement in the development of the education and training system;
- b) the Chambers have been given significant responsibility but often lack the resources to develop standards that can form a sound basis for the development of relevant curricula and related qualifications, or to ensure that such standards are relevant to the current and future needs of the labour market;
- c) the standards set are based on fairly broad work activity descriptions and related knowledge (see Table 3). While these are a very useful development, a considerable amount of further work is required to develop the standards into measurable and assessable performance standards and related curricula and syllabi. The extent to which this work is currently being carried out within the education system is unclear;
- d) there is no mechanism currently in place for prioritising the occupations for which standards are being set. As it is recognised that the work is very resource intensive it would appear to be beneficial to identify priorities and plan work programmes accordingly;
- e) while the Chambers obviously have a very thorough knowledge of current work requirements and there is extensive consultation, no complementary research on labour market and economic trends is available to guide their work particularly in terms of identifying core skills, emerging skill needs, current skill deficits, numbers required etc.;
- f) the current priority is to develop standards as the basis for initial education and training. Further work is required to develop mechanisms that will ensure that these standards are also met by those currently at work and by unemployed workers who are undergoing retraining;
- g) the 'dual' system is being tested in a number of occupations. This work needs to be evaluated and its relevance to other occupations assessed;
- h) the standards are focused on 'technical' skills and related knowledge. They do not cover the core skills required; and
- i) more training is seen to be required for those involved in developing the standards, coupled with access to a central source of advice and information.

5. Priorities for the future

Based on the study visit the following priorities for the future were identified:

- 1) Carry out research on labour market and economic trends affecting individual sectors and the implications of these trends for specific occupations, including sectoral studies with an international dimension.
- 2) Identify key occupations as priorities for the development of vocational education and training standards through the proposed sectoral studies. This research will help to identify occupations where current curricula and related standards are most out of line with industry's needs.

- 3) Carry out research to evaluate the approach currently being used to develop vocational education and training standards, in particular:
 - how was the work actually carried out by the different groups?
 - is it relevant to all types of firms, regions?
 - is it providing a sound basis for future skill development?
 - is it proving an effective basis upon which to develop curricula?
 - is it developing best practice?
 - are the schools and colleges adopting the new standards?
 - what are the barriers to their adoption by the schools/colleges?
- 4) Allocate adequate resources to one organisation (possibly the Centre for Vocational Education and Training) to co-ordinate all training needs analysis work and ultimately to develop a coherent and agreed national framework for such work. This organisation should be resourced to provide a central service of expertise and advice to all the expert teams involved in setting the new vocational education and training standards, and also the teams given responsibility for carrying out the various sectoral studies.
- 5) Review the type of statistical information routinely being collected on the labour market to assess the potential contribution it can make to the vocational education and training standards work being carried out by the Chambers and to the prioritising of such work. For example, evidence of skill shortages, vacancy data, growing or declining occupations, characteristics of the unemployed etc.
- 6) Allocate funding to carry out the programme of work outlined above. The proposed human resources development fund could be used for this purpose.
- 7) Carry out additional training for those involved in setting the new vocational education and training standards.
- 8) Ensure that mechanisms are in place to involve the education system in the development of the vocational education and training standards. Such involvement is more likely to result in the adoption of the standards by the schools and colleges. This should include the allocation of resources for retraining of trainers and teachers.
- 9) Ensure that the vocational training analysis is expanded to include management and professional occupations, and that related curricula and qualifications facilitate progression and career planning to higher level technical and management occupations.
- 10) Ensure shared learning in this area among other Central and Eastern European countries involved in this work.

6. Action plan

Based on the above assessment of progress achieved to date, issues arising and priorities for the future, the following action plan was agreed:

Action plan for Slovenia

Activity	Actors	Deadline	Budget
1. Appointment of the Steering Committee	MOLFSA	February 99	
2. Selection of sectors (tourism and catering, pharmaceutical, chemical)	national experts	February 99	
3. Appointment of two sectoral steering committee groups	CPI	February 99	
4. Selection of foreign institute	European Training Foundation, CPI		
5. Visit of foreign expert advising on sectoral studies, including validation of vocational education and training standards in selected sectors and defining the methodology	foreign experts	February - 1 week	
6. Visit of foreign expert advising on identifying key occupations and assisting on development of standards	foreign experts	May - 1 week	
7. Evaluation of the available labour market data and the potential use for the labour market analyses	national experts	March 99	
8. Carrying our sectoral studies	national experts, foreign experts	May 99	
9. Workshops for social partners to present results of sectoral studies: ■ Chambers ■ trade unions ■ training providers	national experts, foreign experts	June 99	
10. Workshop for dissemination of results of the occupational analysis	national experts, foreign experts	October 99	
11. Evaluation of the sectoral study and occupational study approach prior to agreement on further such studies	national experts	October 99	

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